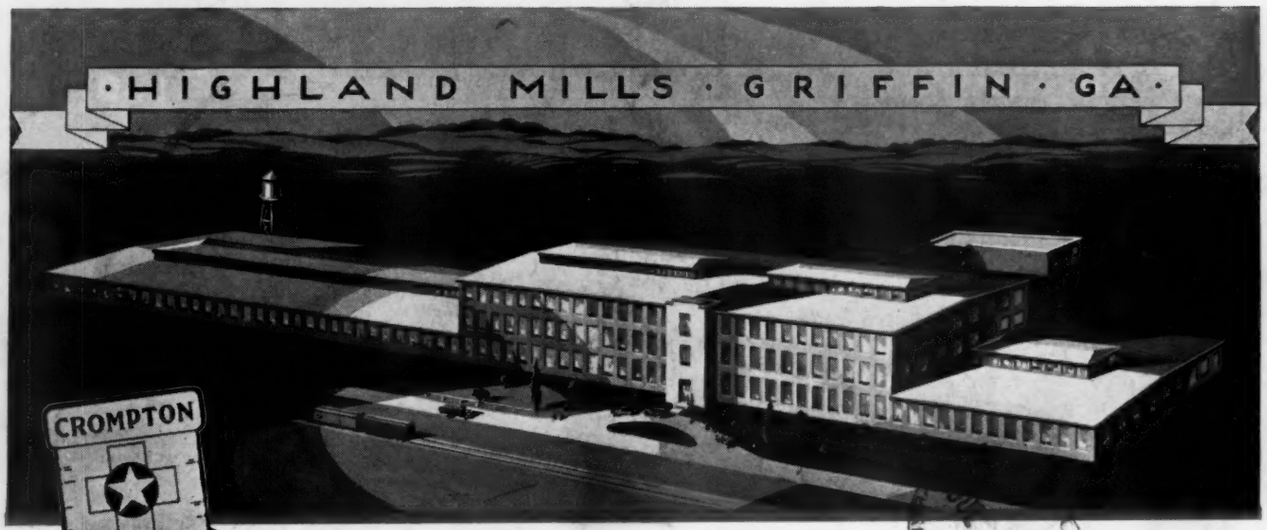
JULY, 1934

COTTON

Serving the

TEXTILE INDUSTRIES



SOUTHERN UNIT OF CROMPTON COMPANY

HIGHLAND MILLS, southern unit of Crompton Company, producers of the nationally known Crompton's Velvets, Velveteens and Corduroys, have always insisted on the finest facilities for the most modern manufacture of their quality line.

Since the plant was erected in 1925 three additions have been completed, each project receiving the guidance of a staff of engineers trained in working out complex textile mill problems.

Today, with the latest addition just completed, Highland Mills will house 25,600 spindles and 1,200 looms, producing Crompton's nationally known fine velvets, velveteens and corduroys.

Robert and Company is prepared to take your problems, study each aspect, and work out comprehensive plans for competitive efficiency. Preliminary consultation is entirely without obligation.

ROBERT AND COMPANY
ATLANTA INCORPORATED GEORGIA
Architects and Engineers

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Volume 98
Number 7.

COTTON

July, 1934

TS1550
C8

Yarns .. WE DON'T TELL 'EM .. WE SELL 'EM

F. P. YARNS LIVE UP TO PROMISES

SOME kinds of yarns promise much that fails to materialize in performance. ¶ Not so with F. P. cotton yarns. They always live up to promises, insofar as it is humanly possible to make them do so. Our offerings come from highly reputable manufacturers who take every precaution to assure standardized quality from one spinning to the next. ¶ F. P. offerings include all popular counts and qualities—natural, bleached or dyed, in most of the standard put-ups commonly used. ¶ Let us make recommendations, send prices and samples.

FRANKLIN PROCESS COMPANY

Yarn Merchants and Yarn Dyers. Also Manufacturers of Glazed Yarns and Machines for Dyeing and Bleaching Yarns in the Package Form, Cotton and Wool Raw Stock, Worsted Tops and Worsted Yarn on Jackspools, also Machines for Soaking Silk. Main Office and Plant at Providence, R. I. Branch Plants at Philadelphia, Pa., Greenville, S. C., and Chattanooga, Tenn. New York Rep., 40 Worth Street

FRANKLIN PROCESS

COTTON YARNS AND CUSTOM YARN DYEING

COTTON is published monthly by W. R. C. Smith Publishing Co. Dalton and Atlanta, Ga. Subscription Rates, United States and Possessions, $1.00 for one year; $2.00 for three years; Canada, $1.50 per year; Foreign Countries, $2.00 per year. Entered as second-class matter at the postoffice, Dalton, Ga., under the Act of March 3, 1879.

The New Draper
Spinning Ring
Starts Well
Runs a Long Time
and
Will Not Break

Its Adamant Surface
Is Wear-Resistant
To Traveler Action

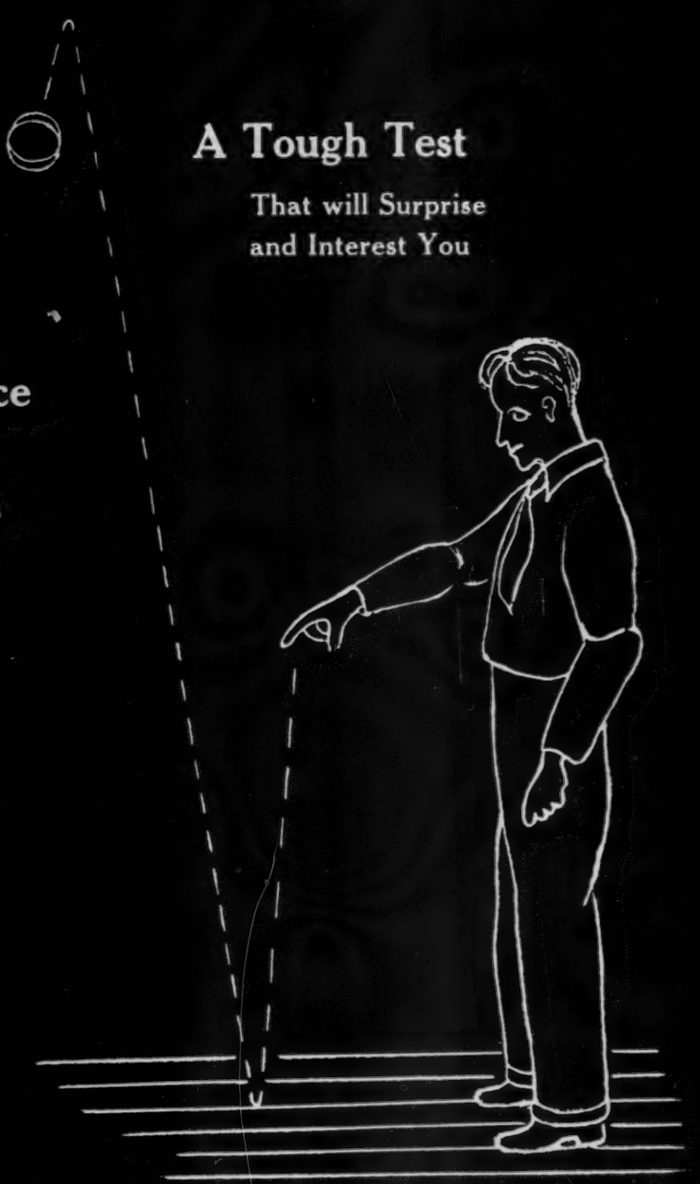
High Production
in your
Spinning Room
Depends Upon
Good Rings
That Keep Fit

Hard As Flint But Will Not Break

as you can Prove
by Bouncing It
on the Floor

A Tough Test

That will Surprise
and Interest You

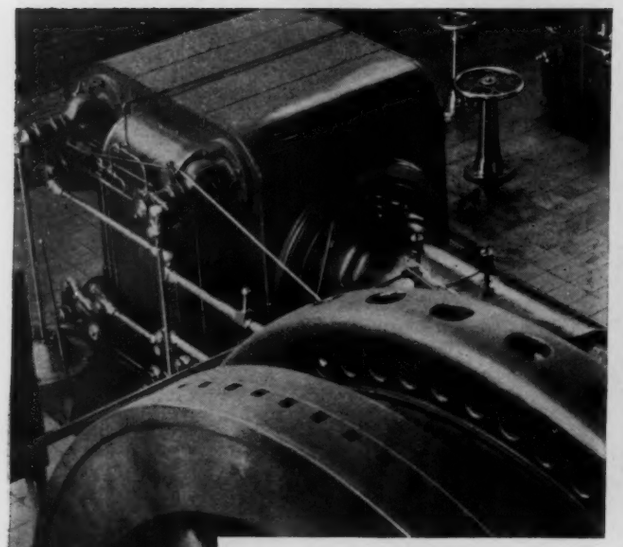


DRAPER CORPORATION

Hopedale Massachusetts

Southern Offices Atlanta Ga and Spartanburg S C

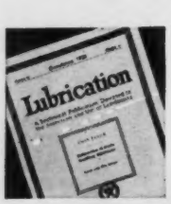
POWER



made and used *at less cost*

Many textile mills have found that Texaco *tested* Lubricants are more *economical* to use than ordinary oils and greases. For reciprocating steam engines, turbines, Diesels, hydro plants, there is a lubricant that has been proved suitable for each type of unit—every load requirement—all operating conditions.

Texaco *tested* Lubricants have *proved* that they will help to reduce the friction drag that wastes power throughout the mill. Texaco Lubrication Engineers, with *practical* textile experience, can advise on lubricants best suited to the efficient and economical performance of all kinds of production machinery—from bale-breakers to trimming frames. Plus the power savings secured by reducing friction, spoilage from oil throw is minimized by Texaco Engineering Service. It is more than likely that Texaco can promote valuable economies in your mill—similar to those secured for other mills well known to you. It will pay you to write to The Texas Company. No obligation.



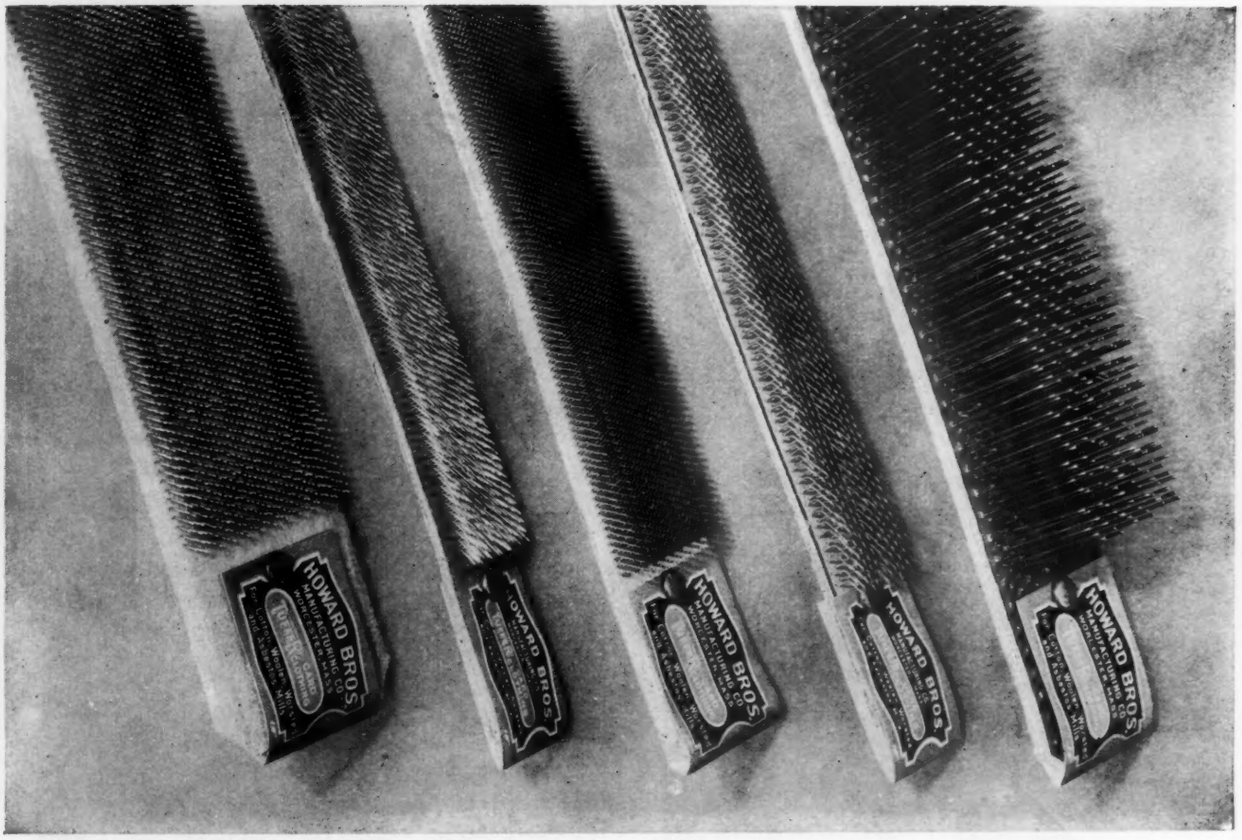
NEW—IMPORTANT—FREE

Filled with interesting facts on textile mill operations. It will be sent without cost. Ask for a copy. It will be valuable to operators or executives. Dept. J J 7

TEXACO

tested **lubricants**

THE TEXAS COMPANY, 135 East 42nd St., N. Y. City ★ "There is a Texaco *tested* Lubricant for every purpose"



Avoid Time Loss!

Reclothe Your Cards Now with TUFFER

If there's even one roll on your card now idle that will need new clothing before another year has passed you can definitely lower your production cost by reclothing with Tuffer immediately. A card tied up during your busy season is an unnecessary and costly expense. Get it ready now.

You don't have to worry about climate. If your carder has ever drawn Tuffer Card Clothing on a cylinder during summer months, he knows that Tuffer with its complete, uniform flexibility under all conditions, plus the stretch resisting qualities of the patented foundation, both of which are common only in Tuffer, assures satisfactory installation.

Get a report on the condition of your cards now. Be certain that they will operate efficiently when profits depend on time saved.

Tuffer Products
Lickerin Fillets
Feed Roll Fillets
Tumbler Fillets
Stripper Fillets
Worker Fillets
Doffer Fillets
Fancy Fillets

TRADE MARK
TUFFER
REG. U.S. PAT. OFF.

Tuffer Products
Cylinder Fillets
Doffer Rings
Strickles
Emery Fillets
Burnisher Fillets
Top Flats Recovered and extra sets loaned.

Midgley Patented Hand Stripping Cards and Inserted Eye and Regular Wire Heddles

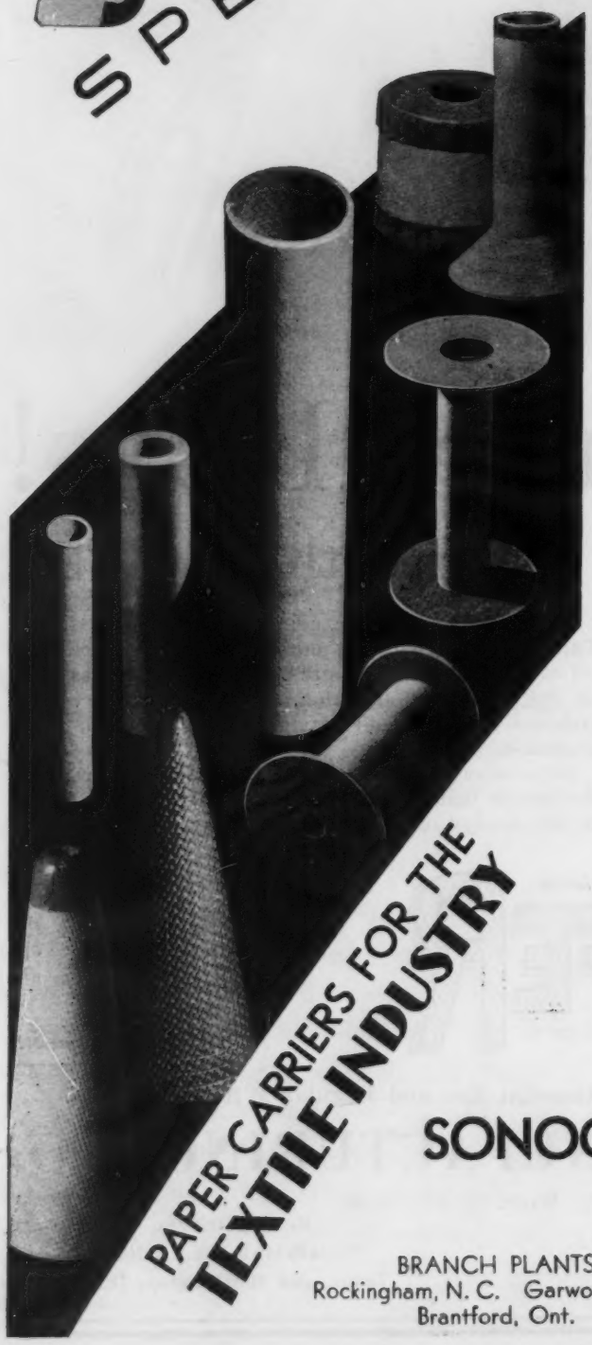
HOWARD BROS. MANUFACTURING CO.

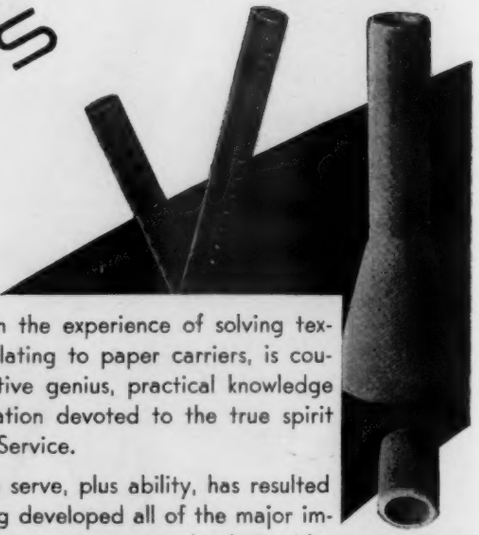
HOME OFFICE AND FACTORY: WORCESTER, MASS.

Southern Plant
244 Forsyth Street,
Atlanta, Ga.

Branch Offices
Philadelphia, Pa., Dallas,
Texas, and Washington, D. C.

Sonoco SPECIALISTS





35 years, rich in the experience of solving textile problems relating to paper carriers, is coupled with inventive genius, practical knowledge and an organization devoted to the true spirit of constructive Service.

Willingness to serve, plus ability, has resulted in Sonoco having developed all of the major improvements in paper carriers made during the past 25 years.

The Velvet Surface Cone and Tube—for rayon and finer counts.

The Dytex Tube—for package dyeing.

The Single Head Spool—for packaging thread.

The Dunlap Nose—perfecting the cone.

The Lacquer Tip—protecting the nose.

The Bottle Bobbin—for one-time use.

The Re-enforced Cork Cot—for greatest efficiency.

The Underclear Roll — for greatest economy.

These, and many others, are exclusive Sonoco contributions to the Textile Industry, developed through constant and never ending research, experimenting, testing, checking, trial and error, until perfection was achieved.

Our pride in accomplishment, however, comes from the fact that the greatest Industry we serve comes to SONOCO **first** for solution of its problems relating to paper carriers.

NRA

SONOCO PRODUCTS COMPANY
HARTSVILLE, S. C.

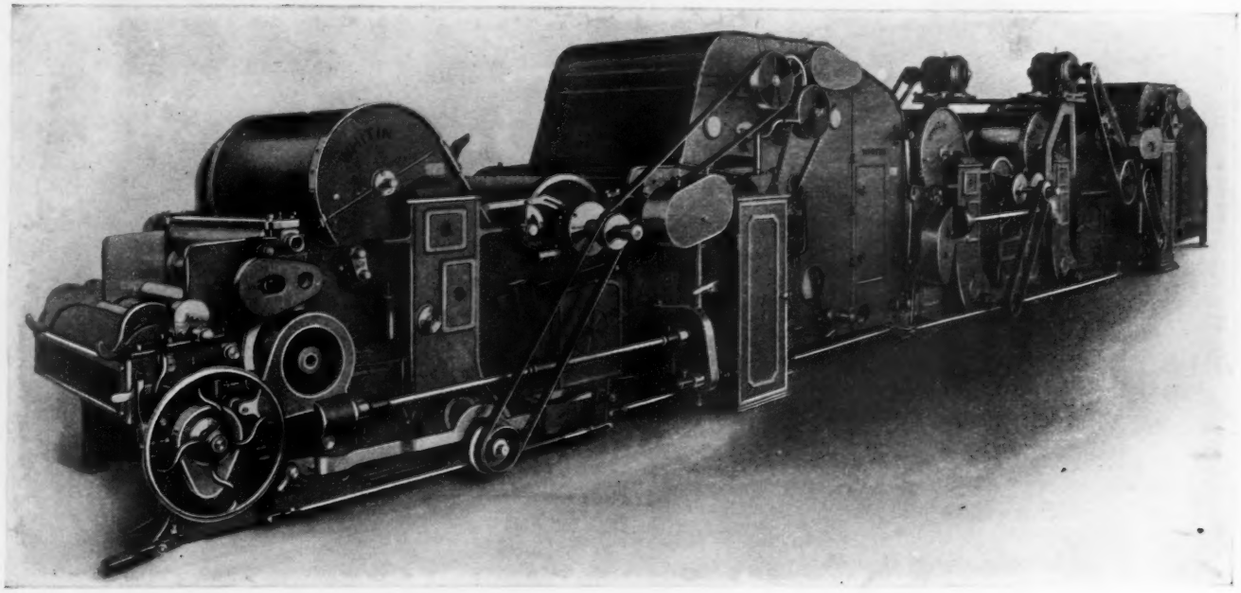
BRANCH PLANTS
Rockingham, N. C. Garwood, N. J.
Brantford, Ont.

MAIN PLANT AND GENERAL OFFICES:
Hartsville, S. C.

EASTERN SALES OFFICE:
North Avenue,
Garwood, N. J.

The WHITIN 1934 Picker Installation

. . . the result of more than one hundred years of progress in building Preparatory Machinery.



THE deep high Calender PERMITS OVERSIZE LAPS. Safety Rack Release and Safety Knock-Off Motions easily accessible from the outside.

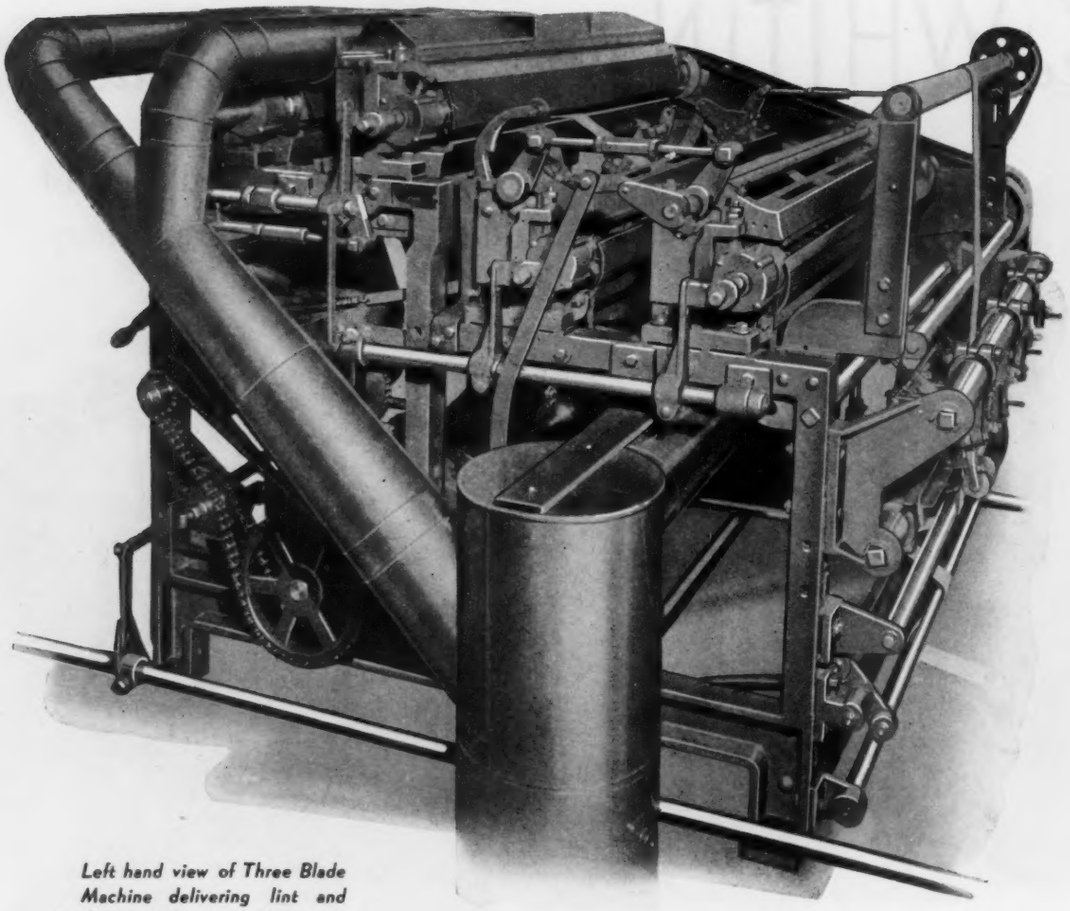
A sensitive Feed Regulator mounted in the Intermediate Hopper controls, AT ALL TIMES, WITHIN VERY CLOSE LIMITS, the amount of stock in the Feeder.

Stock is evened BEFORE it reaches the Feed Rolls, being acted upon by the Pedal Roll and Evener Pedals, thus providing GREATER EVENNESS AND SENSITIVITY.

Helical Gear Drive from Top Cone Shaft to Pin Apron insures AMPLE POWER and a QUIET POSITIVE DRIVE.

All parts readily accessible for rapid adjustment. Cleanout doors conveniently located, of ample size. Ball-bearings used generously throughout wherever practical and advantageous.

WHITIN MACHINE WORKS **WHITIN** WHITINSVILLE, MASS.



Left hand view of Three Blade Machine delivering lint and threads to fan beneath floor.

AUTOMATIC COTTON SHEAR ANNOUNCEMENT TO ALL COTTON CLOTH MILLS

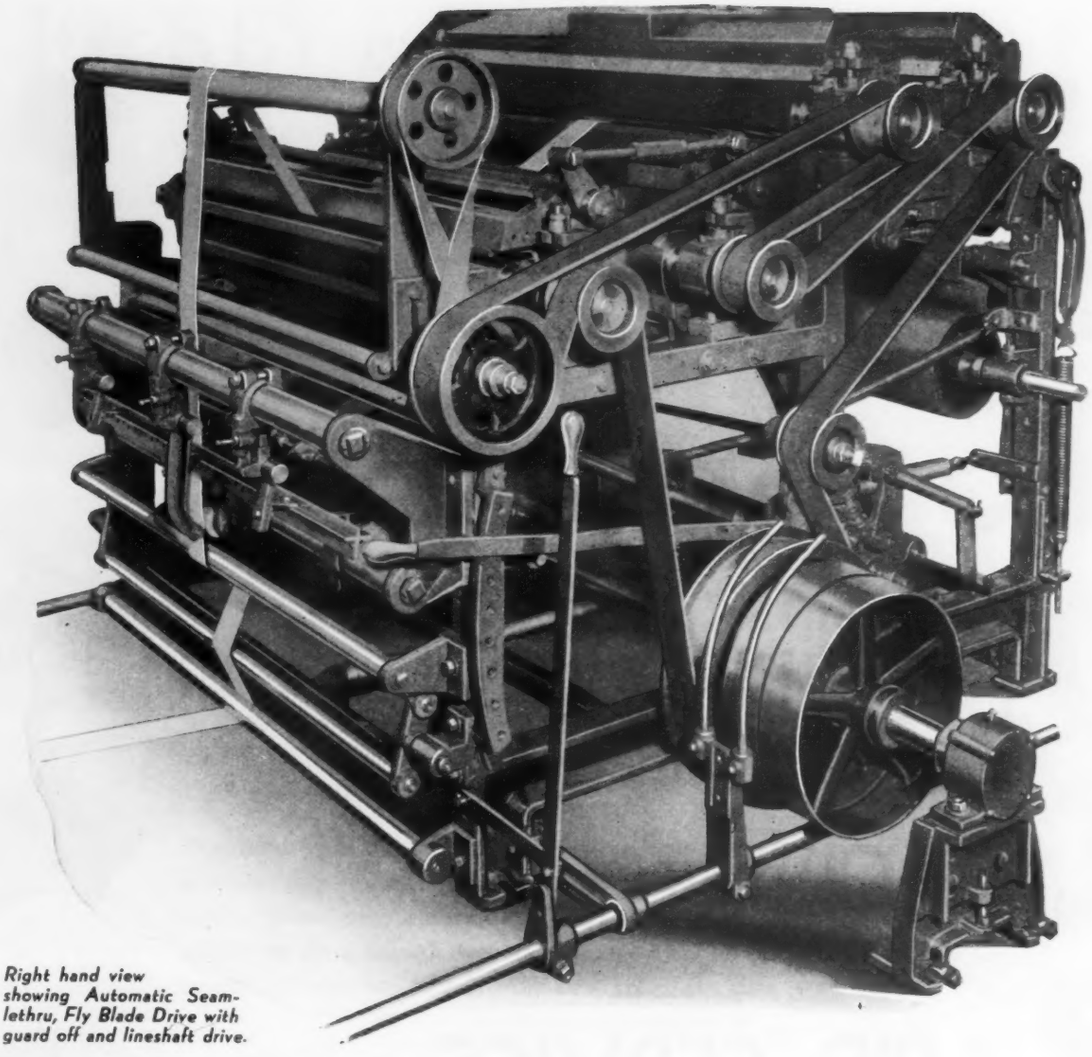
● We have proven by trial installations in such a large number of cotton cloth mills the enormous saving in pay roll that our Automatic Cotton Shear accomplishes, that we have decided to put some of these shears in where conditions are right and take our pay as fast as the actual saving is made.

● This enables you to modernize your cloth room without appropriating one cent of new money.

(*Continued on next page*)

Parks & Woolson Machine Co.
Springfield, Vermont

P. B. RAIFORD, Jr., *Southern Representative*
Concord, North Carolina



Right hand view showing Automatic Seamlethru, Fly Blade Drive with guard off and lineshaft drive.

Merely divert the saving to us for a short time till account is settled, after which you have a permanent reduction in your pay roll and we are both satisfied.

● Our Automatic Cotton Shear runs itself. The man who sews the cloth ends together merely keeps it supplied with cloth and takes it away. You don't hire any more help.

● As it cleans the cloth perfectly of all hanging threads and dandruff and at a speed of about 75 yards per minute, it saves a lot of girls and at the same time it wonderfully improves the finish and increases production.

● Write our Mr. Raiford to call and lay this before you.

● You can't afford to pass it by.

● Our Automatic Cotton Shear is a perfected patented machine that we put in on a free unconditioned trial, you to be your own judge.

● It cleans all the cloth close up to each sewing and it does not open the blades for every slub and knot that comes along.

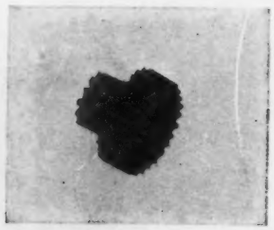
● Never smashes a blade. Never damages the cloth.

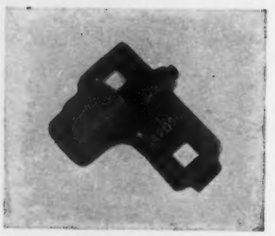
● Never misses a seam.

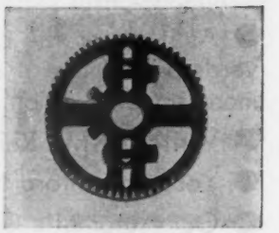
Parks & Woolson Machine Co.
Springfield, Vermont

P. B. RAIFORD, Jr., *Southern Representative*
Concord, North Carolina

HIGH QUALITY
ECONOMICAL
NO INACCURACY
DEPENDABLE
EFFICIENT
RAPID SERVICE
SURE FITTING
OUTLAST OTHERS
NEEDED PARTS



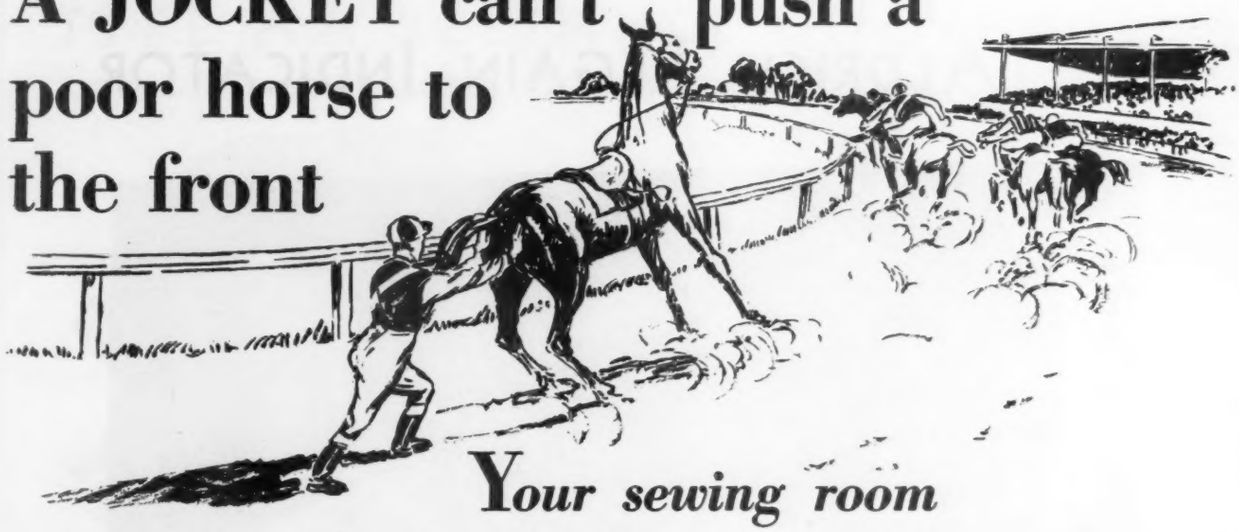




ALWAYS IN STOCK---PRICES ON REQUEST

HENDERSON FOUNDRY & MACHINE WORKS • Hampton, Georgia.

A JOCKEY can't push a poor horse to the front

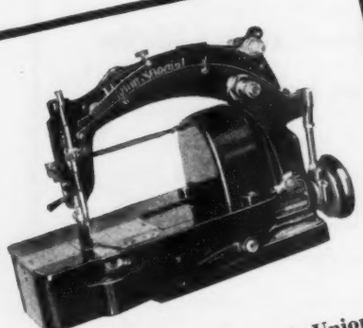


Your sewing room can't overcome the handicap of obsolete machines

If you suspect that your sewing room costs are high, the chances are the fault lies directly with the type of machines in use. Even the most skillful operators cannot get more work out of a machine than it was designed to produce.

Perhaps you don't know whether your equipment is obsolete by present day standards or not. It will pay you to find out. You can make your own check-up, from your own records, together with accurate data which we will gladly furnish. We have a convenient printed form on which you can tabulate this information for your own sewing room.

There is no obligation involved in requesting copies of this form 374 and comparative data which our representative can give you. You may be surprised—as many others have been—to see how much you were losing through obsolete sewing equipment. Why not write now?



7 of these Style 79100 B Union Special machines are estimated by one manufacturer from his own figures, to save $1300 a year in labor cost, with operators' rates increased 15%. He will pay the cost of this new equipment in 290 operating days, a net annual return on the investment of 96.3%.

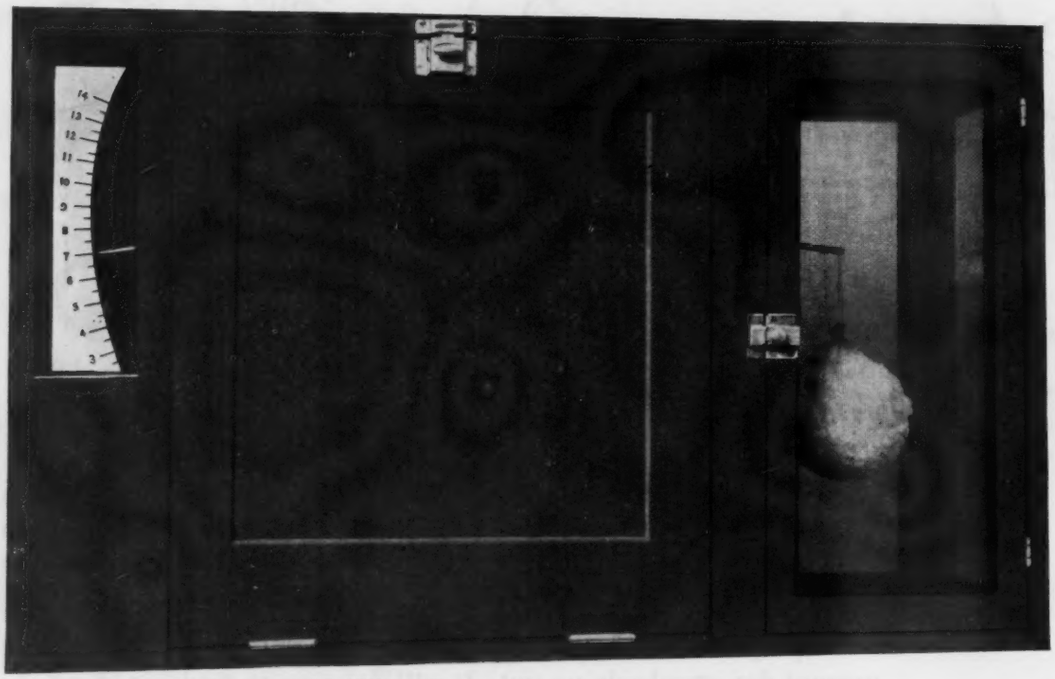
UNION SPECIAL MACHINE CO.

400 North Franklin Street

Chicago, Illinois

NRA MEMBER U.S. WE DO OUR PART

THE ALDRICH REGAIN INDICATOR



AS NECESSARY IN A COTTON MILL AS A CLOCK OR A THERMOMETER

The weight of cotton and anything made of cotton changes with the weather. The Aldrich Regain Indicator tells you how much it has changed, and what to do about it.

This instrument is used in about 300 cotton mills, and should be in every mill.

With it you can make evener yarn with less effort.

Made and installed by

AldricH MachinE

Greenwood, WorkS South Carolina

TYPE AA RELIANCE LOOM MOTOR

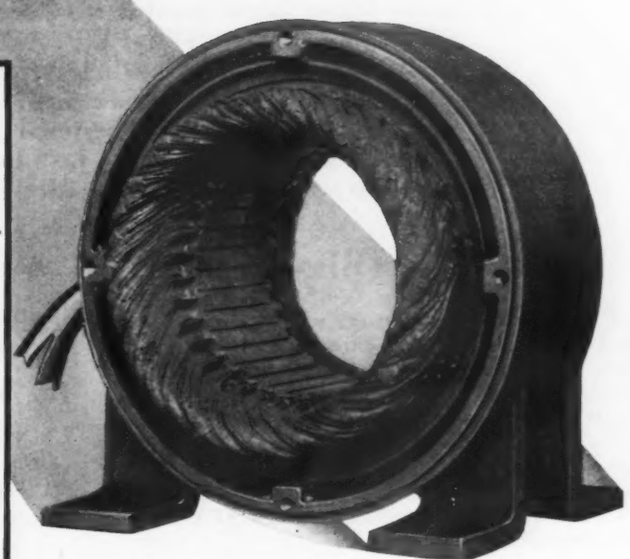
STRENGTH

As automatic looms have been stepped up to 200 or more picks a minute, users have been putting a growing emphasis on mechanical ruggedness in loom motors.

They know that as looms must be improved to meet new demands, so must driving motors. They realize too that other good features mean little unless motors can stand the rapidly recurring load peaks and continuous vibration inherent in high-speed loom operation.

That's why strength has been made the foundation for Reliance design.

- Stator frames are rolled steel.
- Substantial steel feet are securely welded to the frame.
- Stator laminations are tightly and permanently held between two steel end rings electrically welded to the solid frame.
- Torsional strains are taken by the solid frame and are not transmitted through the stator core.



THIS forms the substantial groundwork for the addition of solid bearing brackets liberal bearings, and cast-type rotors with shafts of high-carbon steel, heat-treated.

The combination of good materials, liberally used and effectively placed, assures steady performance and long life with a record for low power consumption that remains.

For further details write for our Bulletin No. 303.

RELIANCE A-C D-C MOTORS

RELIANCE ELECTRIC & ENGINEERING COMPANY

1070 Ivanhoe Road Cleveland, Ohio

Branches: Atlanta — Birmingham — Boston — Buffalo — Chicago — Cincinnati — Detroit
New York — Philadelphia — Pittsburgh — Washington

NOW STA-PUT

surpass all other

HIGH FILM STRENGTH

Again Houghton has accomplished the seemingly impossible! They have included in their STA-PUT Lubricants two properties that chemists for thirty years have been unable to combine: HIGHER FILM STRENGTH and "STA-PUT" ABILITY. We believe that this combination of lubricity, load-carrying capacity and ability to "stay where put" without expensive leakage, will revolutionize general lubrication. It means lower maintenance costs, less bearing wear, and resistance to severe shock loads, all described on these pages.

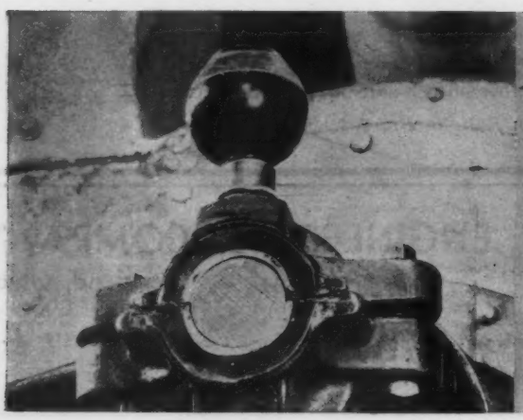
Eliminate Oil Drip

STA-PUT Lubricants stay where they are needed—in the bearings. The greater lubricity is due to the special treatment known as "polymerization," which creates a stronger bond between molecules. When you consider that from 25% to 50% of all oil used drips and creeps out of the bearings, often damaging materials being processed, it is easily understood why this quality alone makes STA-PUT Lubricants stand out.

REDUCE Oil Consumption

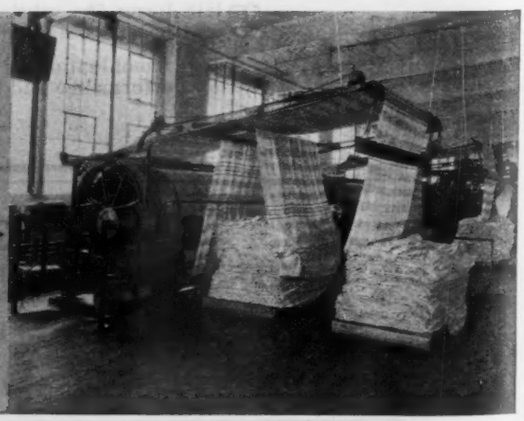
Since using STA-PUT Lubricants, a large industrial concern reports to us, oil consumption has been cut down as much as 75%. That may sound extreme, but we know from hundreds of other instances that huge savings have been accomplished. Not only the cost of the oil itself, but also the labor of oiling has been materially reduced. It is no longer necessary to use a lubricant too heavy for the service simply to make it stay in place.

E. F. HOUGHTON & CO. • PHILADELPHIA • CHICAGO •



← This blower bearing at the left burned out frequently and used excessive oil until STA-PUT was adopted. Now the bearing runs cool and there is no oil drip.

There are no oil stains on → finished fabrics when textile machines are lubricated with STA-PUT. It stays in the bearings and keeps oil off the outside of machines.



LUBRICANTS

oils and greases in

AS WELL AS "STA-PUT" ABILITY

This further step forward in the development of STA-PUT Lubricants was performed in the Houghton Research Laboratories, which have succeeded by chemical means in introducing mineral hydrocarbon products into the lubricants, making their film strength higher than ever before obtained. Tough film strength alone does not indicate long life or economy, unless combined with lubricity. In STA-PUT we have attained the whole objective. Read the results below, then try it for yourself—and prepare to be astounded!

Keep Bearings Cooler

Hot bearings mean friction, which most frequently occurs where there is not proper lubrication or sufficient oiliness. Friction not only slows down production, but also wears out bearings. You can actually *feel* the difference in bearing temperature after you install the correct grade of STA-PUT Lubricant. Remember, a cool bearing seldom fails.

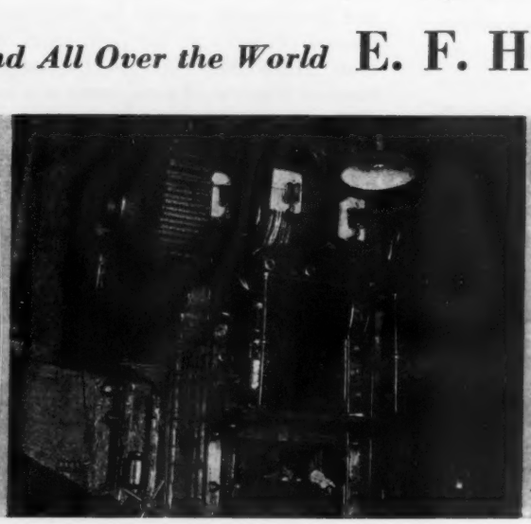
Reduce Bearing Wear

There's no metal-to-metal contact at any speed where STA-PUT is the lubricant. Its tough film is from 40% to 65% stronger than that of ordinary oils, resisting severe shock loads, and prolonging the life of the bearings. And there is no abrasive filler, soap or sulphur added to STA-PUT Lubricants to give it greater load-carrying capacity—no thickening in use, no separation when carried in stock.

DETROIT · ***And All Over the World*** **E. F. HOUGHTON & CO.**

In the press at the right → STA-PUT 340 is being used in the three large oil cups at the top for crank bearings.

STA-PUT 340 is used in the Farval lubrication system at the lower left for all other bearings.



HOW TO LEARN MORE ABOUT STA-PUT
Fill out this coupon and mail to—
E. F. HOUGHTON & CO.
240 W. Somerset Street, Philadelphia, Pa.

☐ **Please send me your folder on STA-PUT LUBRICANTS**

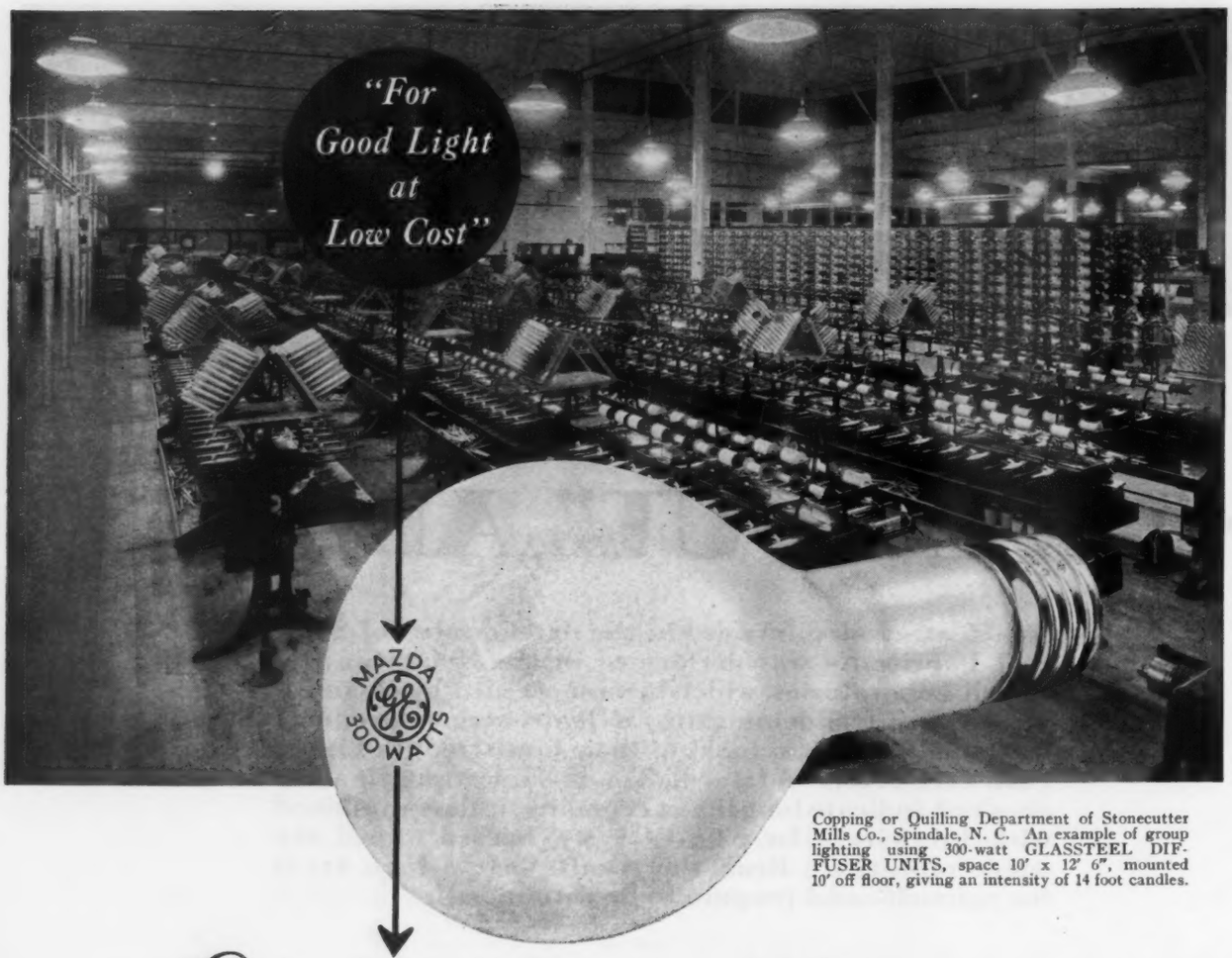
☐ **Recommend and quote me on the proper grade of STA-PUT for**

_____
(service)

Name .....

Company .....

Address .....



Copping or Quilling Department of Stonecutter Mills Co., Spindale, N. C. An example of group lighting using 300-watt GLASSTEEL DIFFUSER UNITS, space 10' x 12' 6", mounted 10' off floor, giving an intensity of 14 foot candles.

Stonecutter Mills Chose
GENERAL ELECTRIC MAZDA LAMPS

THE photograph tells the story of the new lighting installation at the Stonecutter Mills, Spindale, N. C. Note the even distribution of light. No shadows or glare here to strain eyes, slow down the work of operators, and lower the output of machines. Production schedules are easier to maintain. Spoilage is held down to a minimum.

Good lighting cuts production costs and good lamps cut lighting costs. Stonecutter Mills use General Electric MAZDA Lamps because they give all the light possible for the current they consume . . . do not blacken quickly or burn out prematurely.

Users of General Electric MAZDA lamps receive the benefits of 100 major improvements made through research and development work. In ten years the value of this increased efficiency to the light users of America was more than $1,000,000,000. In the same period the cost of General Electric MAZDA lamps was lowered approximately 50%.

General Electric makes lamps for every lighting purpose, and offers you the services of lighting experts, without charge, to see that you get the most out of your lighting equipment. Write to General Electric Company, Nela Park, Cleveland, Ohio.

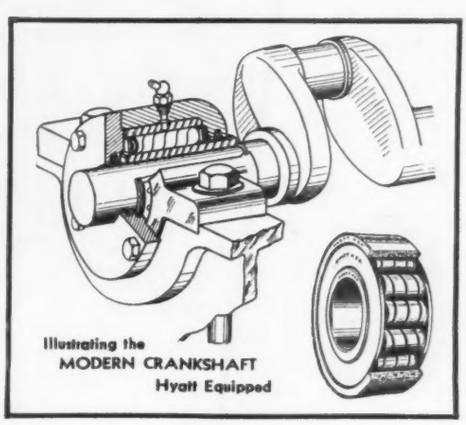
General Electric invites you to visit its exhibit in the Electrical Building at the Century of Progress

GENERAL ELECTRIC
MAZDA LAMPS

COMMON SENSE PRACTICE IN LOOM BEARINGS

For a remarkably small sum eight high duty precision Hyatt Roller Bearings may be purchased for installation at the important bearing positions of a new cotton loom or a rayon, silk or woolen loom.

These eight bearings are mounted on the Crankshaft, the Camshaft, and the Rockershaft. They are mounted in cast-iron housings provided with seals which prevent the leakage of oil and grease.



Illustrating the MODERN CRANKSHAFT Hyatt Equipped

Because they are precise and accurate these roller bearings hold the Crankshaft, Camshaft and Rockershaft firmly in their proper places for the life of the loom.

No mechanism, however well designed and built, can be better than the bearings which hold its related parts in place. Smooth running and better operation depend upon lack of wear in bearings. This statement is just as true of a cotton loom as of a watch, a spinning frame, or an automobile.

No mystery surrounds the application of these better bearings to a loom. Such practice proceeds along the line of orderly mechanical engineering principles with seventeen years of practical experience gained thru the installation of over 100,000 Hyatt Roller Bearings in looms to prove the principle is correct.

Any modern well-equipped machine manufacturing plant can easily and cheaply manufacture the simple housings and apply them to new looms.

When you purchase new cotton looms demand that they be Hyatt Roller Bearing equipped. Then you will purchase a modern loom that will stay new for years and years. No loom, however new, is completely new and modern unless the age-old cast-iron bearings have been replaced with modern common-sense roller bearings. Any further data desired will be gladly furnished. Hyatt Roller Bearing Company, P. O. Box 476, Newark, New Jersey.

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ROLLER BEARINGS
PRODUCT OF GENERAL MOTORS

Belts Around the World

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Wherever man carries on the world's work by machinery leather belts are an essential part of his operating equipment. The more remote he is from a source of convenient supply the more particular he must be as to the quality of the belts that keep the wheels turning.

COCHECO Leather Belting is justly as popular abroad as at home. The quality that insures economical service is integral in it—and such quality is appreciated by men who use belts, buy belts, know belts, in all quarters of the globe.

Our "Book on Belts" tells you how we obtain and guarantee COCHECO *Quality*

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Dover, New Hampshire
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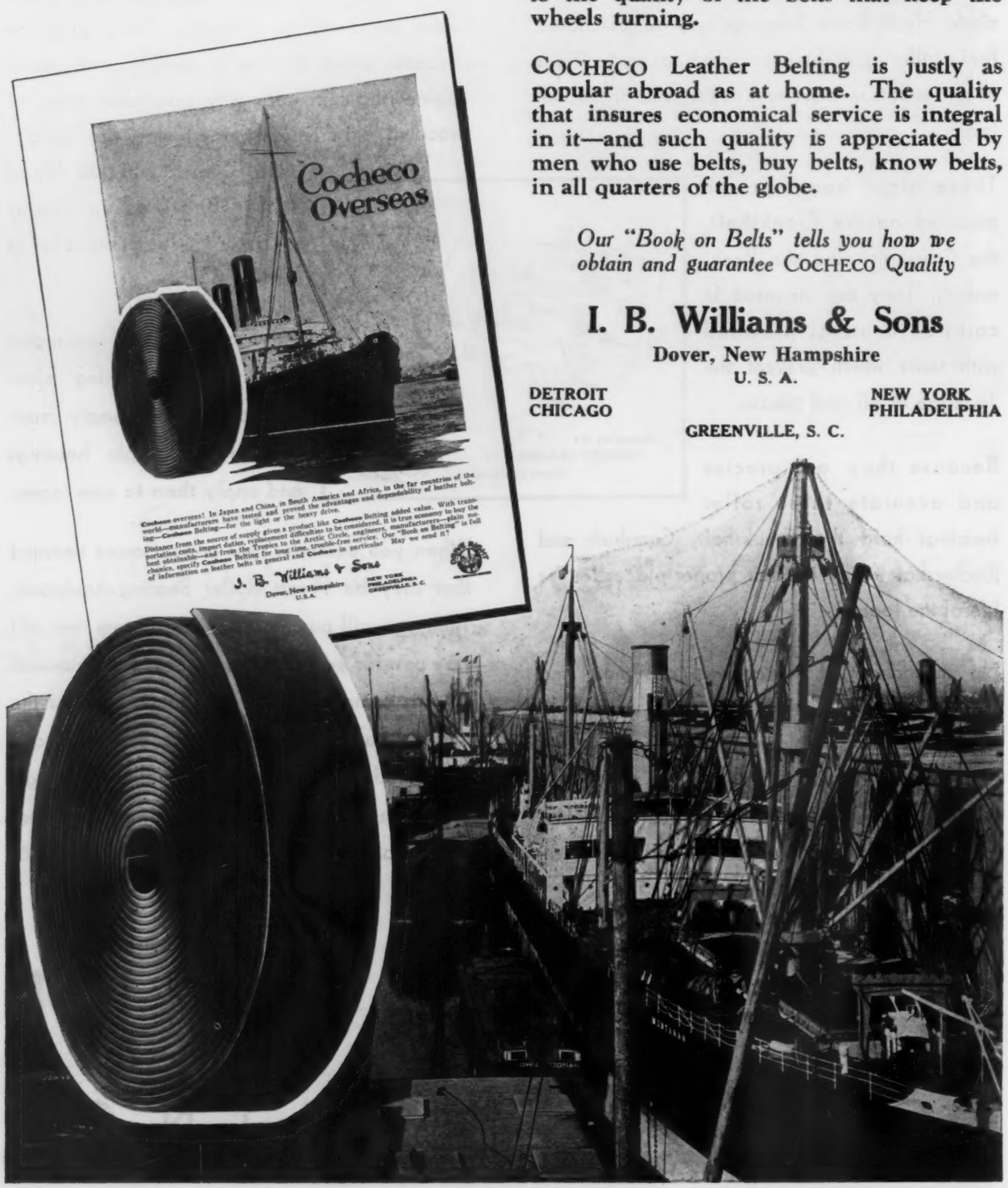
Cocheco Overseas
Cocheco overseas! In Japan and China, in South America and Africa, in the far countries of the world—manufacturers have tested and proved the advantages and dependability of leather belting—Cocheco Belting—for the light or the heavy drive.
Distance from the source of supply gives a product like Cocheco Belting added value. With transportation costs, import duties, replacement difficulties to be considered, it is true economy to buy the best obtainable—and from the Tropics to the Arctic Circle, engineers, manufacturers—plain mechanics, specify Cocheco Belting for long time, trouble-free service. Our "Book on Belting" is full of information on leather belts in general and Cocheco in particular. May we send it?
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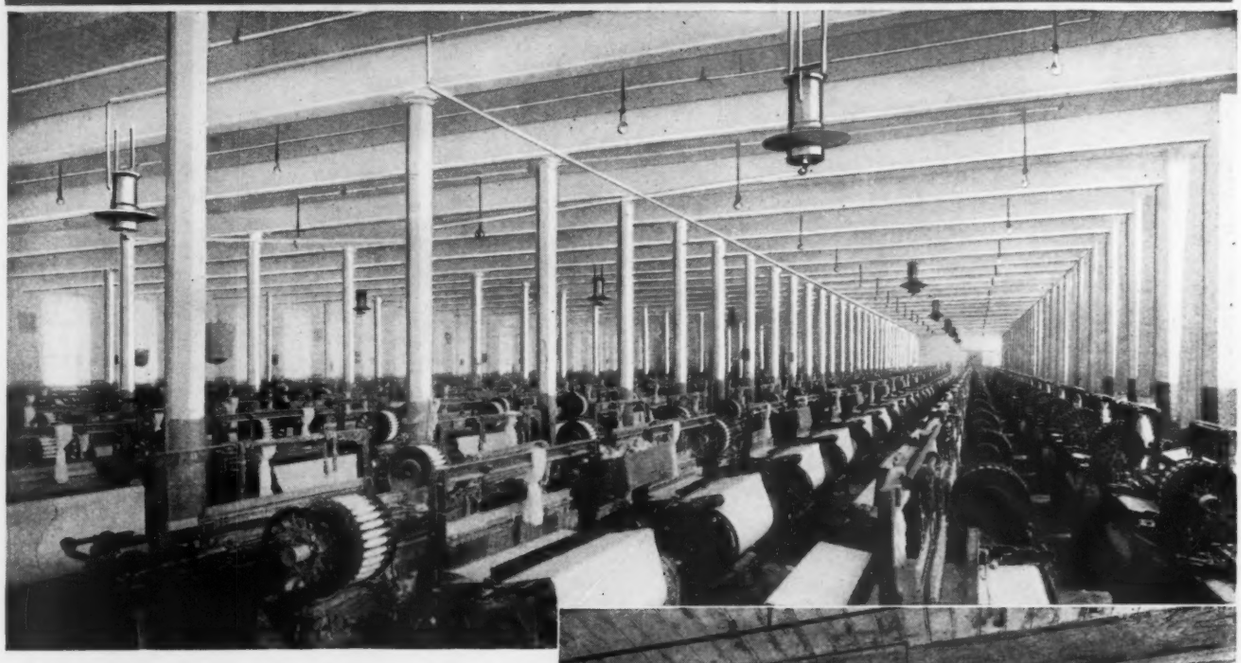
TWO PICTURES *tell the story!*



● No loom or loom operator ever turned out good work quickly while working in the dark. In a poorly lighted room, defects too often "get by" . . . production slows up.

The Tucapau Mills at Tucapau, S. C., recently painted this loom room with S-W Save-Lite. Notice the difference! Every ray of light softly diffused from windows and artificial lights. Working light increased 30% to 50%.

In addition to creating better light for better sight, Save-Lite also increases property value. We have made a comprehensive study of the textile trade's specialized requirements and our finishing engineers are able to recommend products that will give the best service over a longer period of time.

Sherwin-Williams Save-Lite is easily applied with either brush or spray gun. In Eg-Shel, Gloss and Flat, it can be applied over a wide variety of surfaces to meet any light or painting problem in mill or factory.

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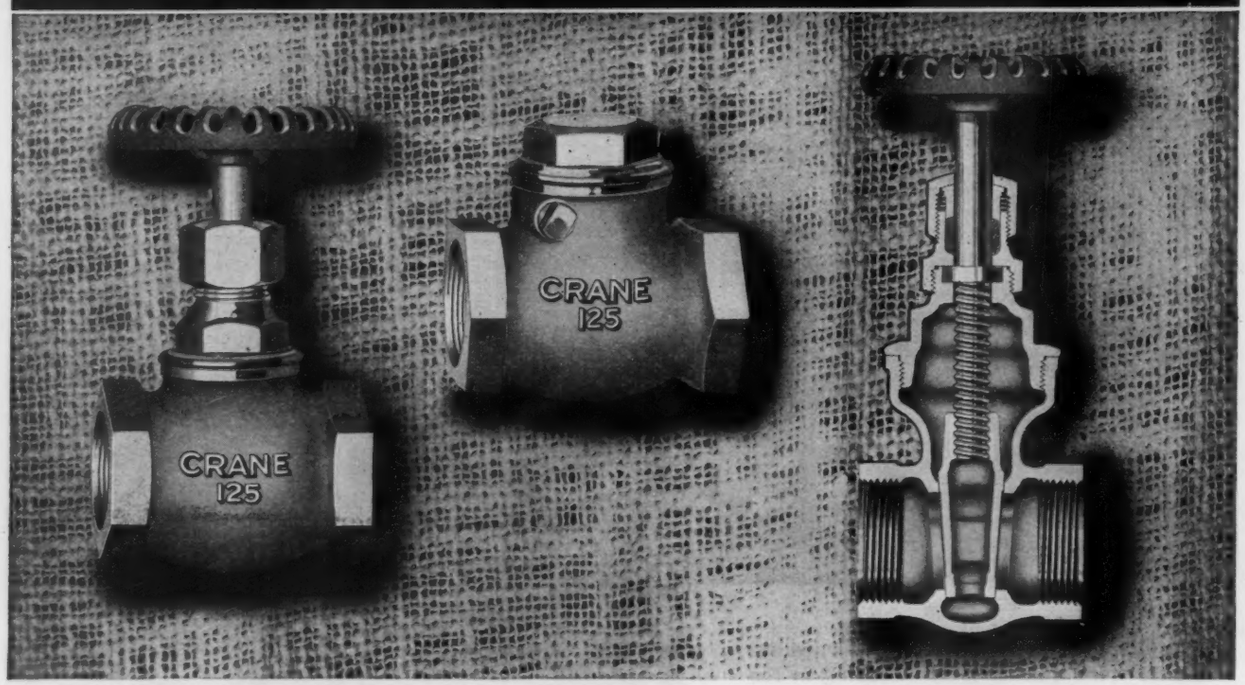

Reading from left to right . . . Crane Brass Globe Valve, Brass Check Valve and Brass Gate Valve . . . all made to uniform dimensions by use of one of the most complete gauging systems in the world!

...in the textile industry

Consider the network of low pressure lines that spread throughout a textile plant . . . and the large number of general utility valves this calls for. Surely these valves total to an item of importance in your yearly purchasing! And that is the reason we call your attention to Crane general utility valves . . . we have built these "ordinary" valves with more than *ordinary* care!

The dependability of Crane brass globe and angle, brass check and brass gate valves is due to the close control over the quality of metal that goes into them. Our cast brass has an unusually high percentage of copper—85% copper to add life to your valve installations! Materials selected for stems and bonnets are notable for their *wearing* quality . . . you have fewer leaking valves to contend with. Where strain is thrown upon the valve, Crane design has built up an *added metal reserve.* These valves are made from the *same high standard of patterns* as the most expensive valve!

Seemingly unimportant, Crane general utility valves will form an important background in the uninterrupted service and smooth operation of your plant. It will save you expense . . . replacement . . . repairs . . . if you write "Crane" into the next requisition that comes to you for general utility valves!

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MAIN DRIVES take

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PAT. APPLIED FOR

THE LOW TENSION RUBBER BELT

Above is a typical main drive installation belted with a 28-inch, 9-ply Condor Compensated Belt. For very severe drives, an increase in the number of plies may be made with same pulleys without affecting the life, operation, or efficiency of the belt.

Condor Compensated Belts are regularly used for every type of heavy duty drive.

On small pulleys, its remarkable flexibility and compensated ply-tension holds fasteners 3 to 4 times longer than standard belt on the same drive. High starting torques and peak loads up to 100% above normal can be safely handled without excessive slip . . . Condor Compensated is an economical general-purpose belt. A trial will convince you.

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Flat Belt	Steam Hose
Air Hose	Mill Sundries
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JACOBS GRAPHIC ARTS COMPANY
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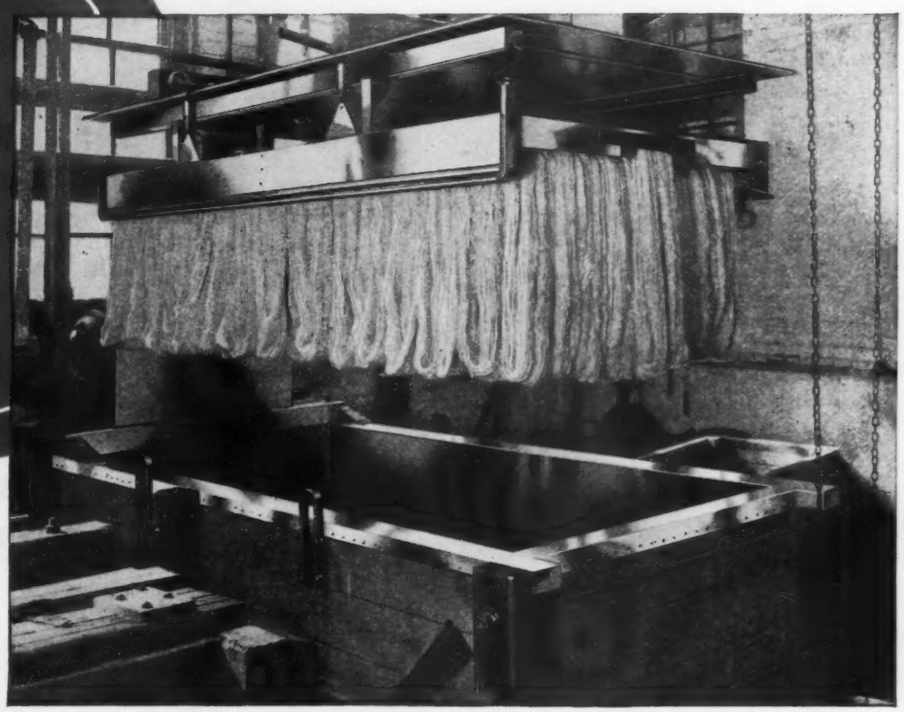
Stainless ENDURO BANISHED CORROSION

IN THIS DYE-HOUSE



These dye racks and sticks in the plant of L. B. Luithlen Co., Philadelphia, Pa., are made from stainless ENDURO. *Fabricated by Hussong Walker Davis Co., Philadelphia, Pa.*

Corrosion and cleaning difficulties, long the bane of the dyehouse, have been banished in the plant of L. B. Luithlen Company, Philadelphia, Pa. The dye racks and sticks illustrated are made of stainless ENDURO, the tough, corrosion-resisting steel. • ENDURO provides not only the stubborn corrosion resistance necessary to defeat attack from all colors, but its smooth, glass-like surface permits speedy and thorough cleaning of dyestuffs when changing colors. In addition, its high strength enables ENDURO to withstand tough usage—assuring years of trouble-free service. • If you have a problem of corrosion, in the dyehouse or elsewhere, ENDURO may offer a satisfactory and economical solution . . . Republic engineers will be glad to cooperate in any way . . . Or, write today for complete data.

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REPUBLIC'S PERFECTED
STAINLESS STEEL
Licensed under Chemical Foundation Patents Nos. 1316817 and 1339378. Enduro is sold only through Republic Sales Offices and Authorized Distributors.

REPUBLIC STEEL CORPORATION

THEY LOOK THE SAME

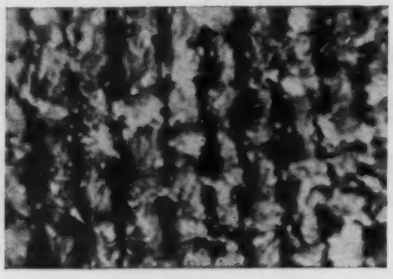
but ONE OF THEM WAS REJECTED—IT'S FEEL WASN'T RIGHT

● The man who buys your finished fabrics demands quality goods . . . and rightly so. He wants a durable weave, fast colors, interesting patterns . . . and above all, a smooth even feel to goods. You can't afford to have fabrics rejected because his fingers detect a certain harshness in the material. But such rejections are all too frequent.

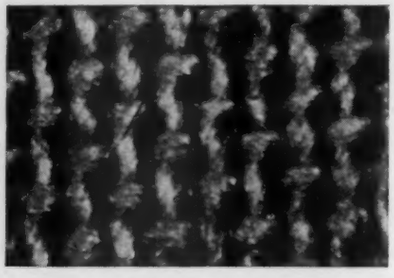
What makes this harshness? An untreated water supply is often the cause. If you study the photomicrographs below, you can see how dissolved and suspended impurities in raw water stick to tiny fibres during processing. These fibres become stiff and uneven, and often give a harsh feel to the finished fabric. *Treated water protects goods from this harshness.*

Water treatment is the specialty of The Permutit Company. For the past twenty years they have led in the development of water treating equipment. Permutit knows that every supply of mill water must be properly treated by coagulating, filtering, softening, and perhaps even further processing to obtain high quality goods. This is most important today, since modern patterns, colors, and fabrics all require more precise manufacturing technique.

Our local engineering staff will be glad to make a free survey of your mill and recommend suitable water treatment. First, send for our free booklet, "Reducing Textile Costs and Troubles," a study of water in relation to modern textile problems. Write The Permutit Company, 330 West 42nd Street, New York.



● Hard water soap curds deposit irregularly on the fibres and can be removed only with the greatest difficulty and danger of injury to the fabric.



● Clean cotton fibres, processed with properly treated water, eliminate the hazard of inferior finish of goods. Bleaching costs are cut.

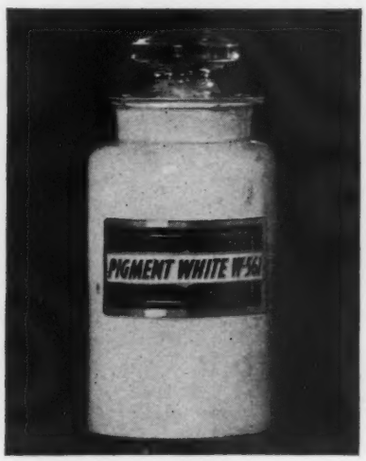
Permutit

Water Treating Equipment

Chemical Specialties

ORATOL

A specially sulphonated, fatty derivative which is resistant to lime, magnesium salts, sulphuric acid and mineral acids. It is recommended for unusual penetration and scouring silk, cotton and wool. Only a small proportion used in the wash for printed silks brightens the colors and pigment white objects.

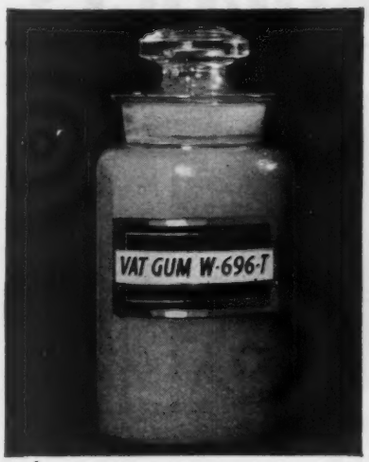


PIGMENT WHITE W-561

Our Pigment White W-561-A is especially adjusted for use with any natural gum thickener. Pigment White W-561-T is to be used in conjunction with a starch or starch-tragacanth thickener. The finely suspended pigments of these two products give a free flowing body to the printing paste.

BACKFILL BINDER K

This product has been used by a number of mills with unusual success. Being highly soluble it dissolves readily in cold water and is more economical to use. Its adhesive qualities prevent the sizing from dusting off, and its thickening power is much greater than starch.



VAT GUM W-696-T

This thickener for vat colors contains the required amounts of hydrosulphite and alkali. It gives greatest color values, full penetration, sharp outlines; and its smooth, syrupy body does not go ropy.

MONOPOLE OIL W-745 **SULPHONATED OLIVE OIL W-700**

Our Monopole Oil W-745 is a double sulphonated castor product and Sulphonated Olive Oil W-700 is an all olive oil product. These oils are highly sulphonated and contain the maximum quantity of combined SO_3. They are completely soluble and resistant to hard water and organic acids.

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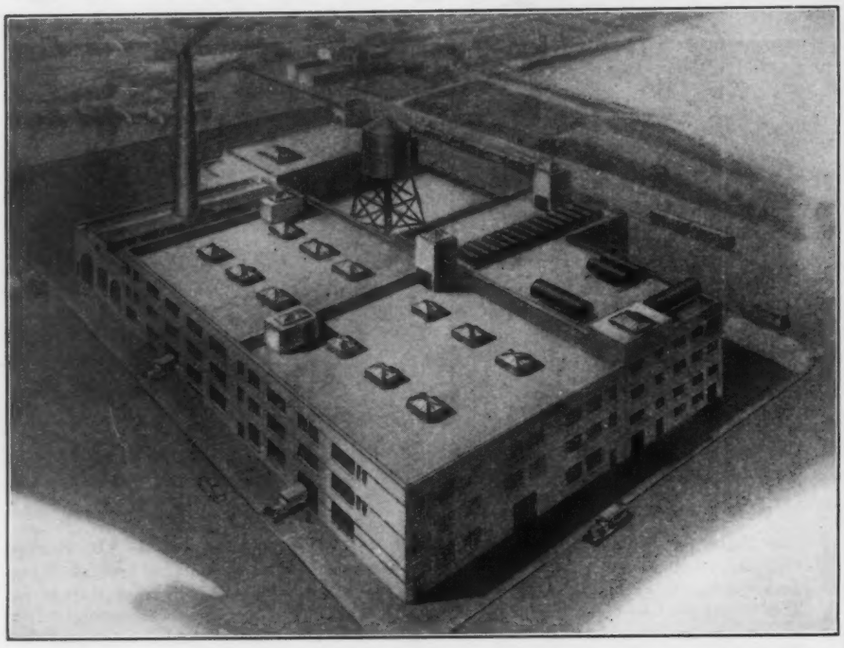

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In this modern, efficient ONYX plant—covering almost a city block—the laboratory is ruler. The test tube is law. Uniformity if the watchword.

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Textile manufacturers interested in reduced operating costs—less troubles—improved outputs—better prices, are invited to write for test samples, stating operation and fabric.

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Specialists on Finishing Materials

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Covering research—analysis—plant control, to assure effectiveness and uniformity.

LARGE STOCK—PROMPT SHIPMENTS
Spacious stock rooms hold large reserves of all compounds, ready for immediate shipment. No delays—no tied up production.

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That's a sign no motorist likes to see. It means a round-about—and usually a rough-route.

In manufacturing there are detours, too. Detours that are really round-about routes that take you off the Road to Quality. Sometimes they look good. Often they seem cheaper. But they really aren't. For, they don't result in the highest quality finished fabrics.

Use Diastafor and you'll keep straight on the Road to Quality. That's because this sizing and desizing agent insures perfect dyeing and bleaching. It has been the most dependable and uniform agent of its kind since it appeared on the market 26 years ago. It's quality is constantly tested by skilled chemists.

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Standard Brands Incorporated
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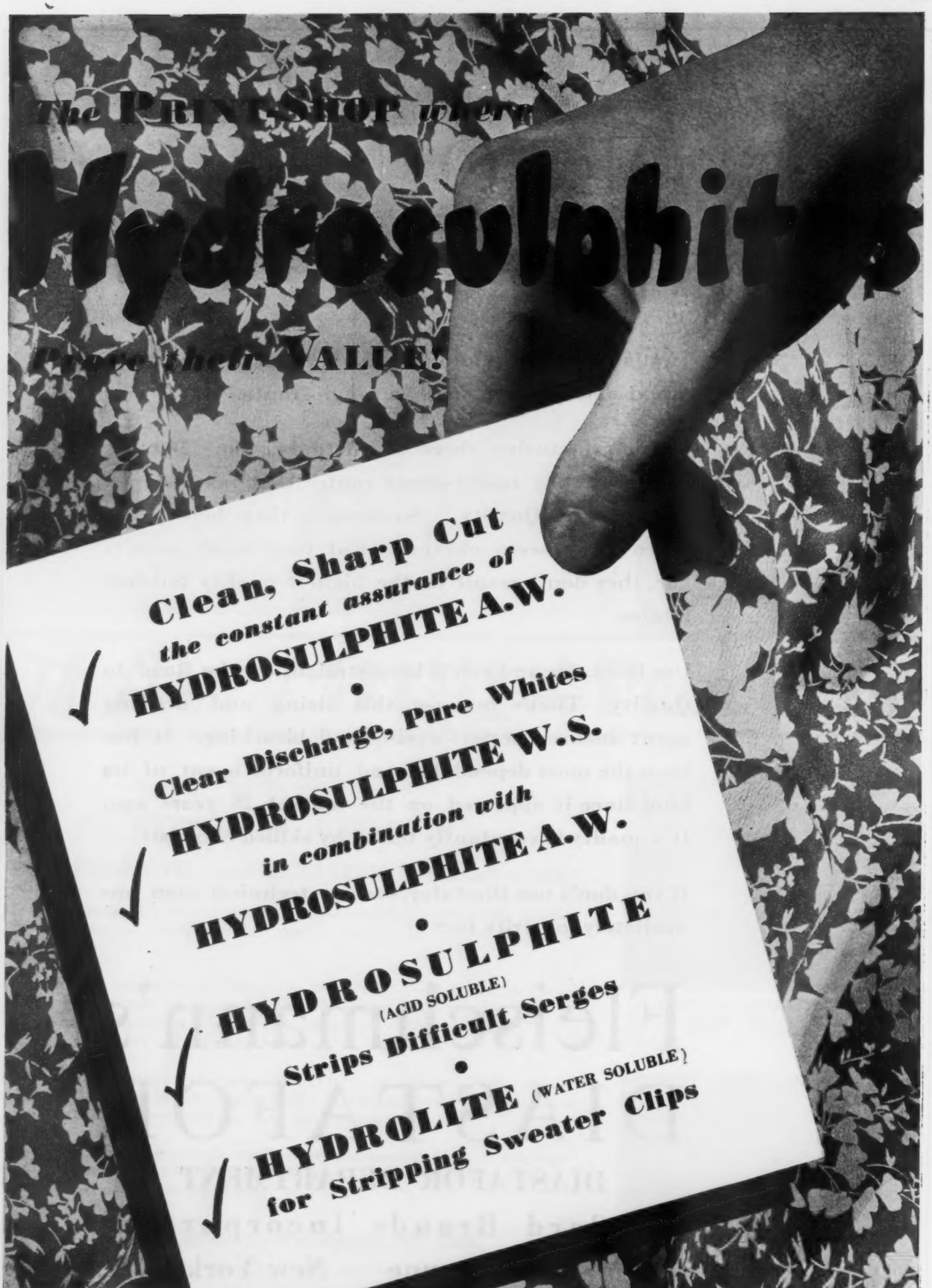

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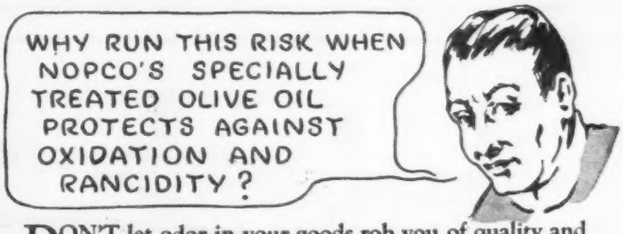

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HARRISON, N. J.

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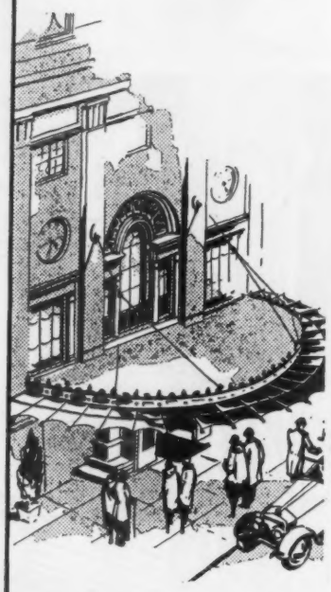

The Della Robbia Room

FOR UNIFORM, LEVEL

DYEING

Hercules Yarmor Steam-distilled Pine Oil, when made soluble by textile chemical manufacturers, is unsurpassed as a wetting-out and leveling agent.

1. It reduces the surface tension of the dye liquor.
2. It makes the dye penetrate evenly.
3. It helps to obtain the proper depth of shade throughout the fiber.
4. The result is properly matched shades and brilliance of color.

Ask your textile chemical manufacturer about wetting-out and leveling agents containing Yarmor.

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Steam-distilled Wood Turpentine
Wood Rosin
Alpha Terpineol
Commercial Abietic Acid
Abalyn
Nitrocellulose
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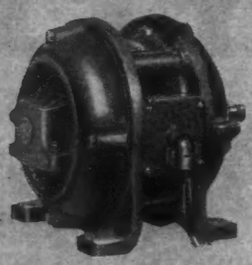
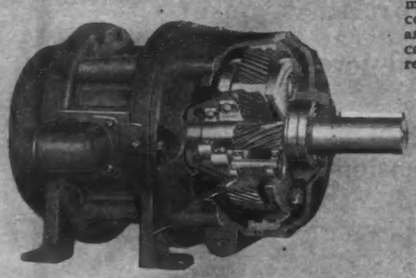
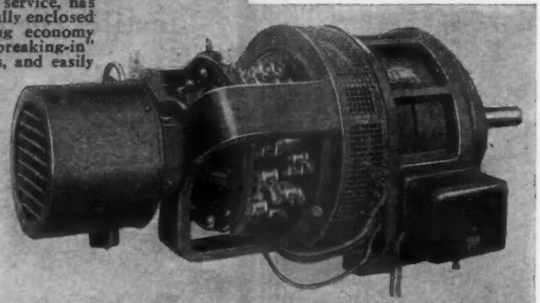


FOR YOUR LOOMS... this G-E motor, designed especially for such service, has many important features—totally enclosed construction, good operating economy and power-factor, ample "breaking-in" capacity, large oil reservoirs, and easily repacked bearings.



FOR YOUR LOW-SPEED DRIVES... the G-E gear-motor provides a compact, low-speed unit, ready for direct connection to your machines. Available in speeds from 11 to 600 rpm., in sizes from 1/6 to 75 hp.



FOR FINISHING MACHINES... if your power is a-c., you can use either the Type BTA motor (above), which offers you the desirable adjustable-speed characteristics of a d-c. shunt-wound motor, or, with suitable conversion equipment, the dependable Type B direct-current motor shown below.

There's a size and type of G-E control built to match exactly the requirements of every G-E motor.

THE right kind of modernization soon pays for itself—and then adds to profits. Investigate the worth-while additions which modern G-E drives can make to *your* profits.

The drives illustrated here, together with a wide variety of other motors and control, as well as wire, cable, transformers, etc., are all available in the *complete G-E line.* From it you can obtain the *right* equipment for every electrical application in your plant.

Moreover, you'll find G-E sales and engineering offices, service shops, and warehouses conveniently located near every textile center—all at your service, ready to "follow through" on every detail of your electrical requirements. For particulars, address the nearest G-E office; or General Electric, Dept. 6A-201, Schenectady, N. Y.

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GENERAL ELECTRIC

Vol. 98

COTTON

No. 7

July, 1934

W. R. C. SMITH, Publisher
T. W. McALLISTER, Editorial Director

ROBERT W. PHILIP, Editor

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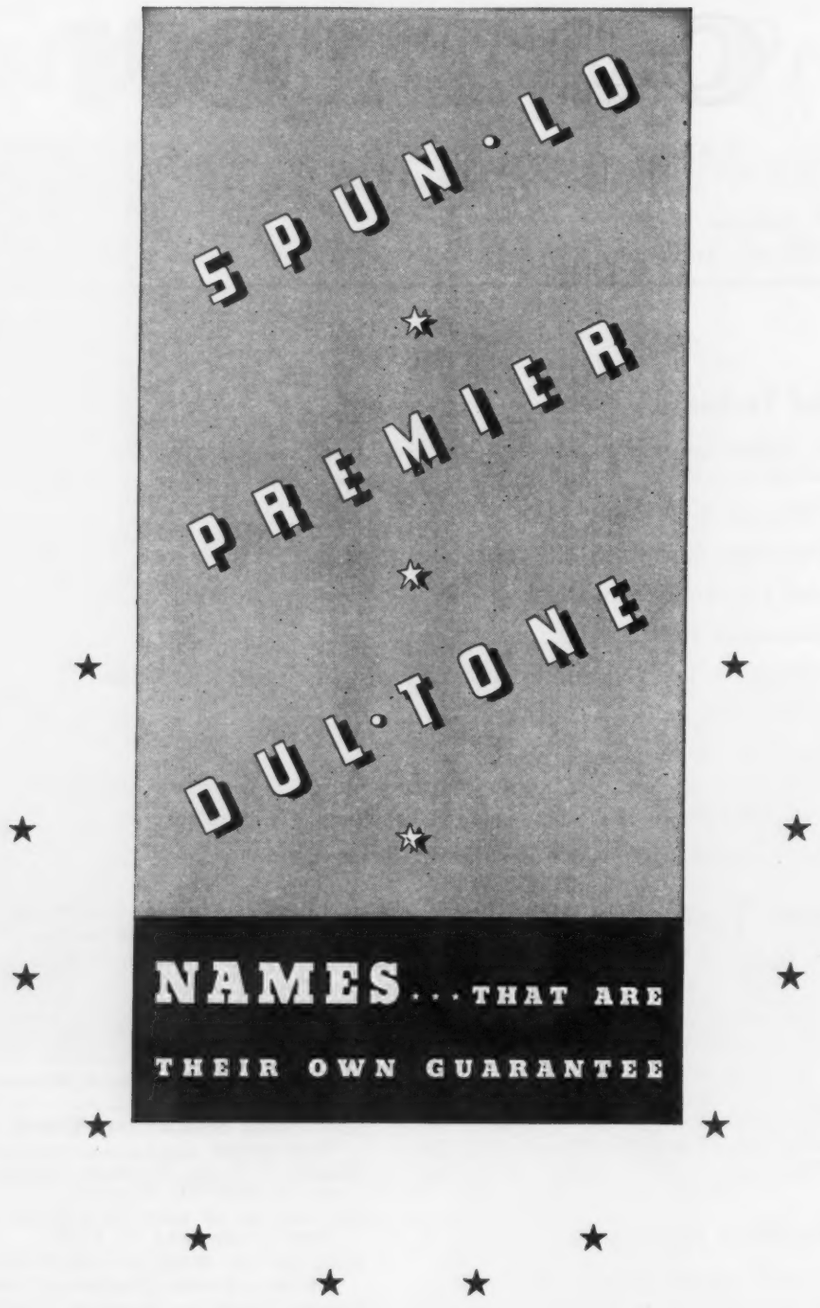

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INDUSTRIAL RAYON CORPORATION

9801 WALFORD AVENUE • CLEVELAND, OHIO

Vol. 98
No. 7

COTTON

July,
1934

Recent Additions to Martha Mills Demonstrate

Co-ordination in Construction

By A. J. Cooper

Manager, Construction Dept., Robert & Co., Inc., Member, American Society of Civil Engineers

A BRIEF description of the recent addition of Unit B to Martha Mills . . . How Goodrich met the new conditions, and added a 40,000-spindle unit—in 45 working days from the breaking of ground to machinery installation . . . A record, and an example of co-ordination . . . . .

THE B. F. Goodrich Company, of Akron, Ohio, is one of the great international corporations which has made America the ideal of the world in scientific mass production. This corporation produces a large percentage of its requirement of cotton cord for casing production in its plant at Silvertown, Georgia. When the Cotton Textile Code Authority of the NRA required all manufacturers to eliminate their third shift and operate two eight-hour shifts instead of three, it created quite a serious problem for the operating personnel of the Martha Mills at Silvertown. One third of the entire labor force would have been idle and would have been forced to seek employment elsewhere.

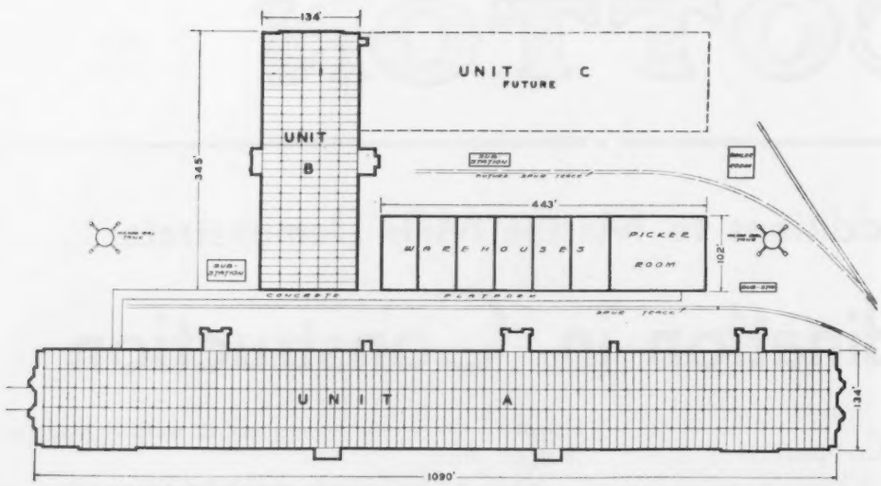
At the Martha Mills fullest confidence and co-operation has always existed between management and labor. This emergency offered an opportunity for the management to exert their powers for the benefit of the people thrown out of work through no fault of either.

While the textile code prohibited the purchase of additional new productive machinery, it did permit the re-location of existing machinery which had been registered as required by the code. The Martha Mills were offered forty thousand spindles of excellent used machinery which were standing idle in the Nashawena Mills at New Bedford, Mass. This machinery was acquired and transferred to Silvertown, Georgia. Since this machinery would employ all the spinners who were thrown out by the elimination of the third shift, and since the preparatory machinery could legally be operated overtime to keep pace with the enlarged spinning, the net result was that no labor dislocation took place and what might have been a serious economic disaster for hundreds of workers was entirely avoided. Half of the new spinning went into operation April 2nd, and the balance a few days later, and the community is busy and relatively prosperous.

It was December 18th, 1933, before a definite decision was reached to proceed with this construction, but for over a month prior to that time the owners had been conferring with their consulting engineers as to the best possible method of making the enlargement in case it should be undertaken.

These preliminary studies were of wide scope. Many possibilities were considered which apparently offered no particular advantage, but which were studied nevertheless, so that they could be definitely dismissed. Mr. Albert T. Matthews, vice president and general manager of the Martha Mills was in

Artist's rendering from engineering plans showing appearance of north side of Martha Mills after Unit C is constructed. North elevation of Unit B, now completed, is shown in the five spans at right end



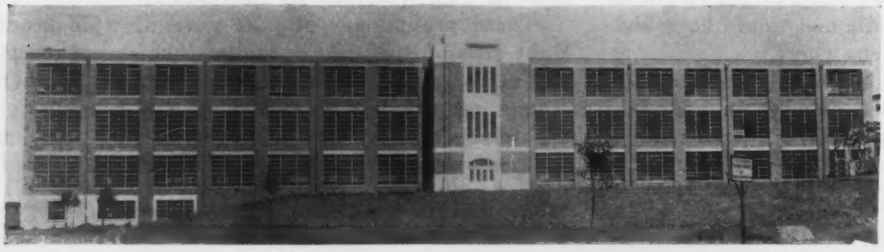
Plat plan of Martha Mills, showing original buildings (Unit A and warehouses), new building now completed (Unit B), and, dotted, future extension (Unit C) . . .

continual conference with the engineers directing these investigations and various experts from his organization and from the central office in Akron contributed their ideas.

These studies went so far afield as to contemplate the location of the new unit in another town or at some other point on the property at Silvertown, remote from the existing manufacturing group. After these considerations had been discarded, every possibility was studied in conjunction with the existing buildings. This planning not only involved machinery lay-outs, but the comparison, by means of topographic maps and building templates, of construction costs. Future additions were also kept in mind and, in fact, machinery block plans were prepared on the basis of making the eventual plant contain 200,000 spindles total. All of this work was undertaken in order to be certain that the best site and the best arrangement was finally selected and to remove the possibility of overlooking some possible future advantage or disadvantage. Machinery lay-outs were even made based on certain types of preparatory machinery which are now usually regarded as being in a developmental stage. When and if these types of machines supersede the existing equivalent, the building will be adequate to contain it. Since this study involved a material cost for paper and ink only, its expense was very little compared with correcting some mistake in brick and steel.

This procedure is an example of the scientific method of planning a project rather than selecting the most accessible open spot and starting to pour foundations, only to find later that no further additions can be made without a clumsy, inefficient arrangement of processes. On page 33 is an artist's drawing of the north side of the plant as it will look when increased later to 200,000 spindles.

When final clearance papers, in the form of a permission to proceed were received from General Johnson of the NRA, the owners were faced with the necessity for speed in construction and also with the oncoming winter weather which was calculated to retard construction. This called for more planning as related to building. That the problem was solved is evidenced by the fact that the building was ready for the reception of machinery in 45 working days,



Left, west elevation of Unit B, showing main entrance and tower. Note simplicity and effectiveness of architectual design . . . .

Right, west end of original Unit A with main entrance, and side view of the new building, Unit B . . .

excluding days lost on account of rain, snow, etc. The floor area is 153,427 square feet. It is believed that this is a record for rapid mill construction in the textile industry.

Naturally this did not happen by chance and while much credit must go to the management of the Martha Mills for removing all obstacles and to the Batson-Cook Company, who were the general contractors, for driving their work continually without respite, it still would not have been possible without what we may call co-ordination, or the application

North end elevation of Unit B, now completed. Unit C will be extended to left . . . . . .

of scientific planning. The owners had their own representative who continuously conferred with the contractor's superintendent as to co-operation between them. The contractor had representatives who travelled to the various places from which materials originated to schedule delivery as needed. The engineers had an able resident at the site who was always thinking a week or a month ahead of the masons and carpenters and who was always ready instantly with lines and grades when needed. Utmost harmony prevailed between the local management, the contractor and the engineer. All were working to one end, the speedy conclusion of the job. All of this may be characterized in one word—co-ordination.

At the time the owners decided to proceed on December 18th, the building plans were not completed and no arrangements had been made with the general contractor. It was decided that to let the work in competition would require a delay of at least 30 days; instead of suffering this delay the owners worked out a form of contract which saved considerable time. The contractor named a maximum lump sum price which he guaranteed. The owners agreed to pay him a fixed fee and further allowed 25 per cent of any savings effected below the guaranteed maximum. Incidentally, quite a substantial saving was eventually effected.

On the 19th of December, orders were placed for structural steel, steel sash and brick. On the 20th, orders were placed for columns, re-inforcing steel and cement. Before Christmas, all the other important items of material were under order and concrete for footings was being poured on December 30th.

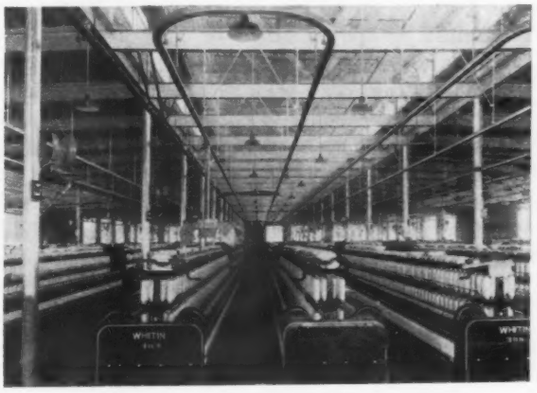
The owners had a steam shovel ready on the site the day the contract was let and as soon as the papers were signed the shovel started to work, removing 17,000 cubic yards of earth from the site. Excavation kept ahead of construction at all times.

Contractors and Sub-Contractors for Unit B of Martha Mills, Silvertown, Ga.

Architects and Engineers ...	Robert & Co., Inc., Atlanta, Ga.
General Contractor	Batson-Cook Company, West Point, Georgia.
Electrical Installation	J. M. Clayton Company, Atlanta, Georgia.
Heating and Sprinkling	Crawford & Slaten Company, Atlanta, Georgia.
Humidifiers	Bahnson Company, Winston-Salem, N. C.
Switchboard and Miscellaneous	Westinghouse Elec. & Mfg. Co.
Motors and V-Belt Drives ..	Allis Chalmers Mfg. Company.
Controls	General Electric Co.
Structural Steel	Virginia Bridge & Iron Co., Roanoke, Va.
Brick	Bibb Brick Company, Macon, Georgia.
Steel Sash	Detroit Steel Products Co., Detroit, Mich.
Miscellaneous Iron Work ..	R. D. Cole Mfg. Company, Newnan, Georgia.
Roofing	O. A. Smith Company, Atlanta, Georgia.

There were certain electric power lines and pipes on the site which had been considered and were removed and replaced over the week-end immediately following the start of the job. The general excavation was finished on January 6th. The footings were completed on January 11th, and the first car of columns was received the same day. In the meantime the plans and detail specifications had been completed just as though the work was to be let in competition.

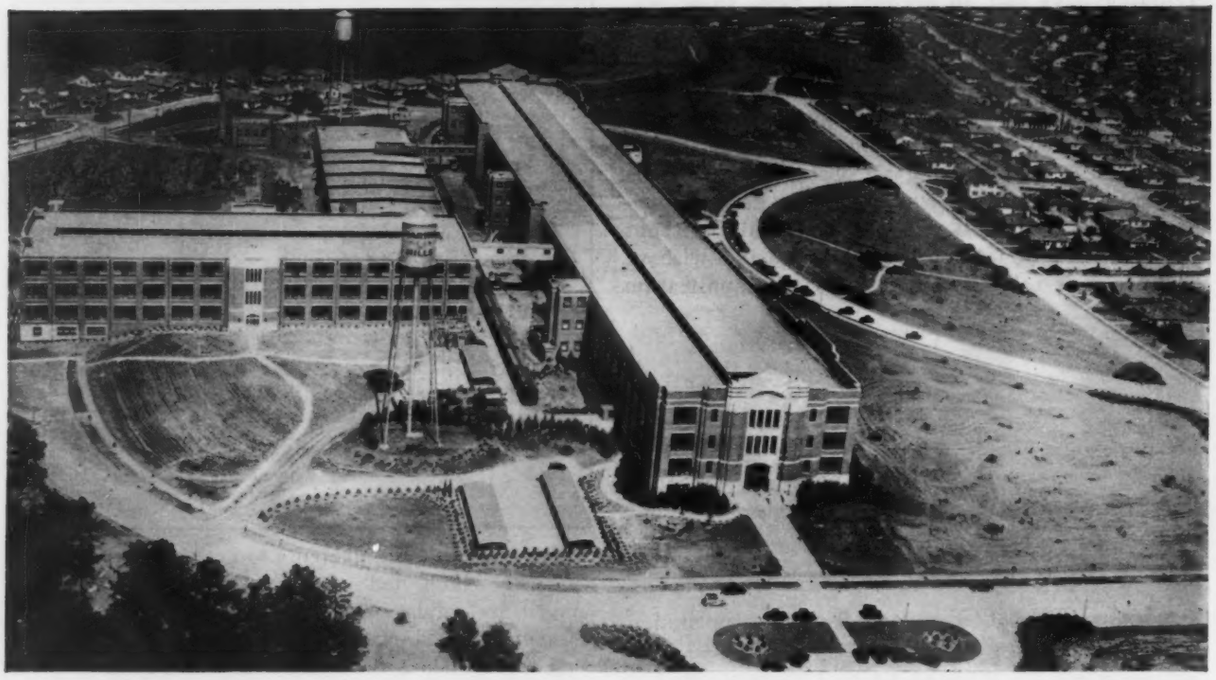
By February 12th roof planking was being placed and the brick parapet started February 19th. Maple flooring was started on the third floor on March 2nd. This floor was the first to receive machinery, the spinning frames, so it was rushed ahead of the others. The owners were erecting frames on March 5th,



Third floor spinning room of new Unit B. Attention is called to the desirable arrangement for natural light and ventilation and attention to small details such as humidifier drains, etc. Note overhead cleaning system . . . . . .

which was the 45th working day since contract was let. Some of these frames were in operation on March 12th. After that time the limiting factor was the erection of machinery and the final completion of the building proceeded to a conclusion on April 15th.

As noted, the building contained 153,427 square feet of floor space. It is approximately 350 feet long, 135 feet wide and three stories high with a part



An excellent airplane photograph of Martha Mills, made on July 2, 1934, showing the present plant and its surroundings on that date. The large building is the original Unit A. At the left and to the rear of Unit A is the recently completed Unit B, the construction of which, in a record time of 45 working days, is described in the accompanying article . . . . . .

basement. The sketch on page 34 shows the general location of all structures. The original mill, called Unit A, contains 100,000 spindles and accompanying machinery. The new construction described above is known as Unit B, and contains 40,000 spindles. The area shown dotted may be constructed sometime in the future. It will be identified as Unit C, and can contain 60,000 spindles or more, bringing the total to over 200,000 spindles.

The building cost was $1.375 per square foot, which is quite reasonable considering the fact that the design is the most modern obtainable and that only the best of materials, including limestone trim, was used, and that more attention was given to architectural merit than is usually the case in buildings of this type.

Space does not permit a discussion of the textile machinery arrangement, or the mechanical and electrical services, all of which are modern and received exhaustive study. The result obtained in the spinning room is well illustrated on page 35.

Modern engineering demands more than efficient machinery lay-out, weathertight buildings and low costs. It calls for speed in construction, planning for the future, and even for consideration of the element of beauty.

Rapid construction is a means to low cost as well as being intrinsically valuable. It is our impression that increasing study will be given to those factors which promote harmonious co-operation between material men, sub-contractors, general contractors, engineers and owner, to the end that speed in construction will be obtained. This study can be called—co-ordination.

Book on Rayon

The first book in English on all phases of rayon processing, covering weaving, knitting, throwing, dyeing, printing, finishing, proofing, weighting and testing, has been published; its title is "Rayon and Synthetic Yarn Handbook". The authors are Dr. E. W. K. Schwarz and H. R. Mauersberger, and the book is published by Rayon Publishing Corp., 303 Fifth Avenue, New York City. The price is $3.00 in U. S. A.; $3.50 in Canada; and $4.00 in foreign countries.

There has long been a need for a thorough, complete and practical book on the subject of rayon, and this publication appears to answer that need. It presents in one volume, systematically arranged and suitably indexed, a comprehensive amount of information pertaining to all phases of rayon manufacture and utilization which heretofore has been available only from a number of various sources. The authors had two definite objects in mind in compiling the book: to gather all reliable and impartial information of a technical and statistical nature, to consolidate this material and arrange it in an orderly and systematic manner; and to prepare it in language easily comprehended by the practical textile man as well as the layman.

Chapter headings include: Historical Background in the Development of the Rayon Textile Industry; Cellulose and the Four Main Processes of Manufacturing Rayon Yarns; Manufacture of Allied Yarns and Materials; Economic and Statistical Background of the Rayon Industry; Physical and Chemical Properties of the Yarns, etc. Other sections cover the weaving, knitting, dyeing, printing and finishing of rayon yarns and goods; analysis and testing; trademarking, etc., and a list of rayon producers.

Some Thoughts on Labor Unions

Written for COTTON by an Observer

FROM time immemorial, when men have been subjected to tyranny and oppression, they have banded together to fight for their liberties, but when freedom has been won they have disbanded their armies and returned to the ways of peace, which are the only ways in which happiness may be found. When a war has been won, the continuance of a big standing army with a lot of sabre-rattling leaders is a constant menace to peace and a perpetual invitation to strife and bloodshed.

After the French Revolution had overthrown the tyranny of the Bourbon Kings, and before the victorious French armies could be disbanded, the scheming Bonaparte obtained control of them and drenched Europe with a torrent of blood which left practically every important European country exhausted and which set up political complications that have not yet been settled.

How different was the policy of our own people following the successful outcome of our Revolutionary War. Having won the liberties for which they fought, the armies were disbanded and the people turned their faces from war to peace. This was nothing but sound common sense. When you have won what you are fighting for, why keep on fighting? Following the French and American Revolutions came what is known as the Industrial Revolution. Men, having thrown off the shackles of political tyranny, began to liberate themselves from the tyranny of nature which had bound them to the soil and a life of the most arduous labor for thousands of years. During the era of transition from the agricultural to the industrial life, there sprang up many abuses and oppressions in industry. The common people who had earned the dearly won political freedom, found that they were enmeshed in an economic bondage fully as heartless and severe as the political serfdom from which they had been liberated.

To free themselves from this economic bondage, workmen organized themselves into labor unions and trades associations to endeavor to win from the tyrannical industrial overlords a measure of the prosperity which they enjoyed, but which they refused to share with their employees. This labor union movement was a more or less spontaneous affair. The grievances of the workmen were real and they were just. The movement was able to go ahead under its own steam without any assistance or leadership other than the natural leadership which sprang into being among the workers themselves.

The fight for which the trade unions were organized has been won. It has been won for a good many years, and its success has been far greater than anything ever imagined by the leaders in its early battles. Now that the fight has been won, why hang on to the standing army? Why entrust tremendous power into the hands of a few professional friends of labor—friends for what there is in it—leaders whose attitude is exactly that of the swashbuckling generals of a big standing army—whose importance is small in time of peace and whose fortunes are improved and importance enhanced by stirring up trouble?

The basic principles for which the old labor leaders fought—decent hours, decent pay, and decent working conditions—have all been recognized by the public; for working people constitute the bulk of the public. Most labor unions today present the sorry spectacle of wretched squabbles over trifles; of the magnification of insignificant complaints to make it appear that labor leaders are really doing something to justify their expensive upkeep. It is to be hoped that the workers in textile mills will adopt a sober and sensible view of the responsibilities placed upon them by the Recovery Act. Under this Act, employers may not protect themselves from the selfish designs of the unscrupulous professional disturbers; men who make a business of stirring up trouble because they find it profitable. The responsibility for keeping these trouble makers out of the plant is largely up to the help. The Recovery Act grants to the workers the utmost freedom in forming labor organizations and dealing with their employers through these. If such labor organizations as are formed are run by and for the help, and with the interests of the help and of the business (without which the help cannot exist) at heart, such associations can do no harm and may do some good. On the other hand, labor organizations promoted by outside interests for the benefit and profit of professional organizers who know nothing of and care nothing for local conditions, can do incalculable harm and little, if any, good.

It will be a fine thing for mill help, in shouldering their responsibilities, to remember that wars are seldom started by the people who fight them, but rather by the people who will profit from them. Industrial battles are seldom started through a spontaneous desire for trouble on the part of the people involved, but are usually the result of carefully and skillfully fomented disaffection started and nourished by outsiders whose only interest in the matter is holding a job. The professional labor leader is exactly like a professional politician; he holds his job entirely by going through the motions of making his constituents think he is doing something for them. The more violent and furious these motions become, the more valuable the politician seems to be to the thoughtless supporter, but the level headed citizen realizes that most professional friends of the people measure their friendship entirely in dollars and cents.

The best friend of the working man is the fellow who gives him steady work at good pay, in a comfortable place to work, and the greater majority of working men undoubtedly know that.

Views of the Bleachery of the Russell Mfg. Co., Alexander City, Ala.

THE accompanying illustrations show views in the bleachery of the Russell Manufacturing Co., Alexander City, Ala. They are presented as depicting a representative southern plant. The equipment was supplied by The Textile Finishing Machinery Company, Providence, R. I., through whose courtesy the illustrations are used. Taking up the photographs in numerical order:

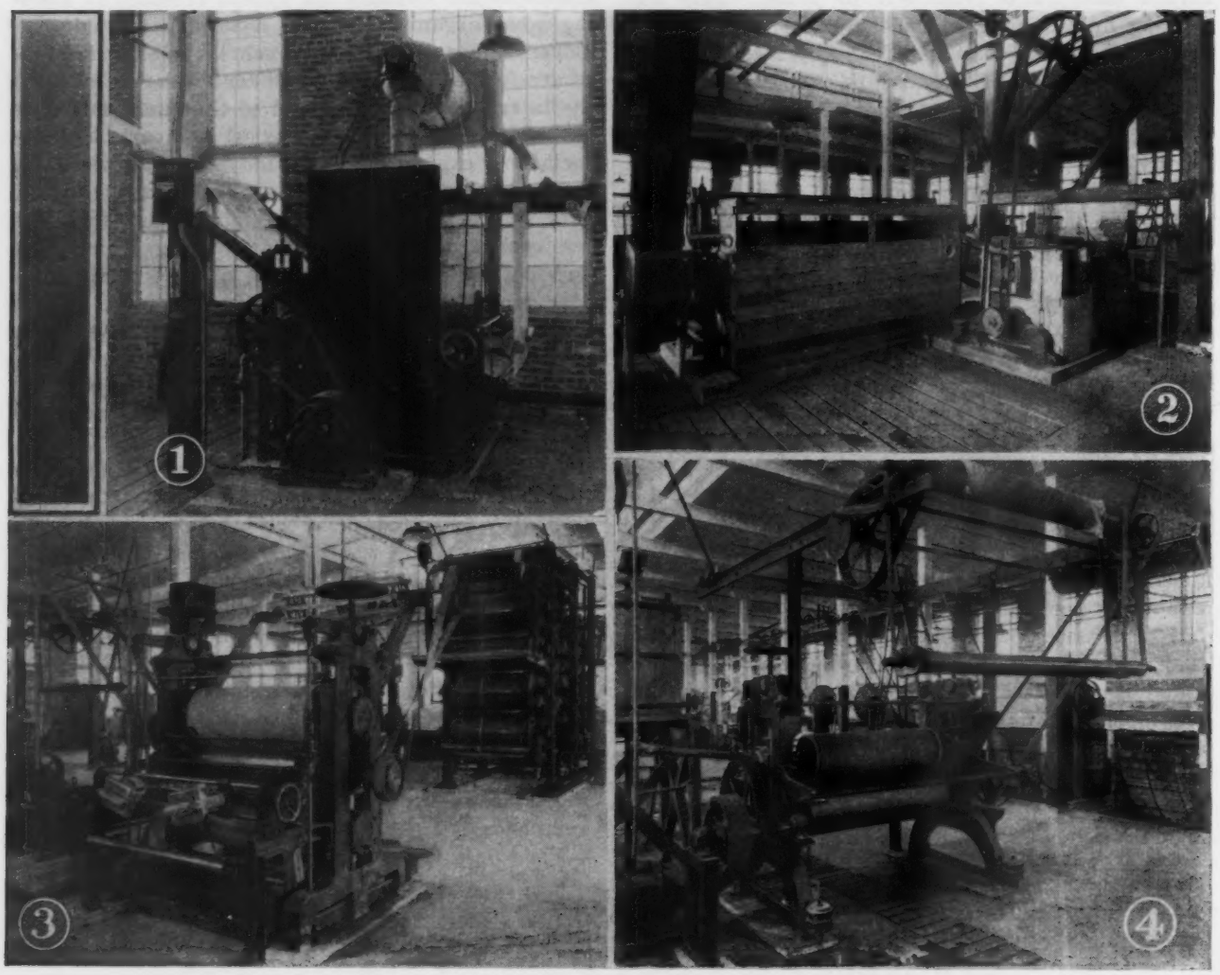
(1) shows a two-burner gas singer of the modern type, equipped with two Kemp compression type burners totally enclosed in the sheet iron hood. The entering side of the machine is fitted with an electric guider and at the delivery end of the machine are shown the rubber-covered wet-out rolls with deep wood diastafor box.

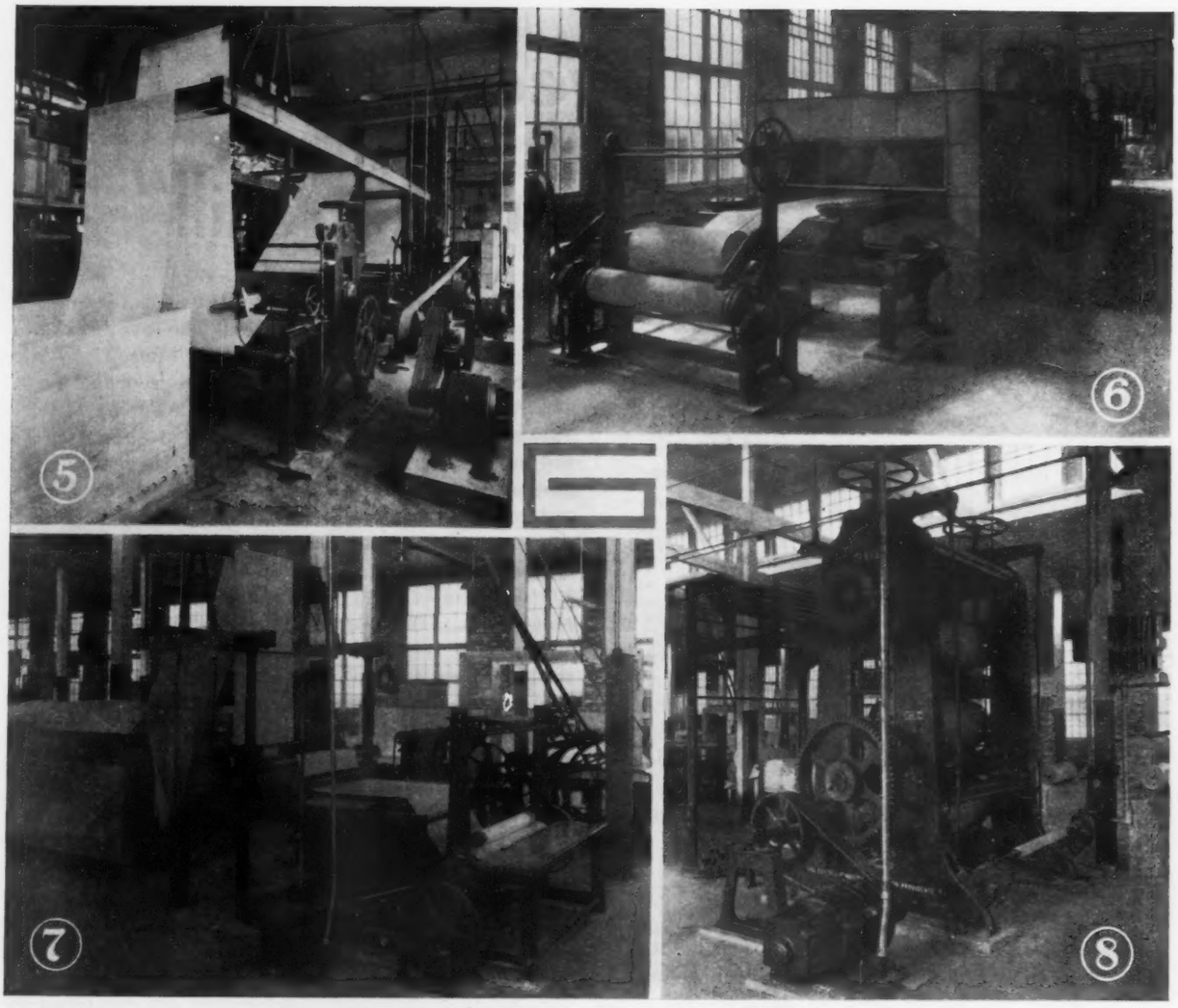
(2) is a view in the bleach house showing a bleach house washer and squeezer in the foreground. The cast-iron frame-work on both machines supports rubber-covered rolls mounted in roller bearings.

(3) is a three-roll water mangle and cylinder dryer. The top and bottom rolls of the water mangle are mounted in roller bearings. There is an electric guider unit at the entering side of the machine and this machine may be operated as a separate unit, in which case the goods would go up over the reel at the delivery side to be dropped into trucks or boxes. Alternately the machine can be run in connection with the dryer, and in this event the goods coming from the water mangle go through the compensator which is shown mounted on brackets from the dryer frame and from the compensator, which controls electrically any variation in speed between the two units, the cloth would go direct onto the cylinders of the dryer.

(4) shows a two-roll dye padder with rubber-covered rolls mounted in roller bearings. The liquor box is of the close-fitting all-metal type.

(5) shows the entering end of the finishing range and in the foreground the two-roll starch mangle with rubber-covered rolls mounted in roller bearings. The machine is fitted with an electric guider guiding the





fabric straight into the machine. The next machine in the range, not clearly shown, is a back starching machine followed by a ten-cylinder upright type dryer from which the fabric enters the tenter. The first of these two starch mangles is used for pure starch finishes. The second or back-filling machine, frequently termed a Tommy Dodd mangle, is used for starching on the back of the fabric only. Both mangles would not be used at the same time; provision is made to skip either one or the other as necessity may demand in finishing various types of fabrics.

(6) shows the delivery end of the range, with a good view of the tenter housing and delivery end of the tenter, together with the automatic cutting-off type winder for batching up the goods. The range shown in (5) and (6) is a flexible unit designed to handle a variety of goods.

(7) shows an atomizing type sprinkler with electric guider at the entering side and a single drum rack and pinion type winder at the delivery side for winding up the goods. This equipment is of course used for dampening the goods prior to the calendering operation.

(8) shows a five-roll calender which is fitted with chasing rolls so that the calender may be used for more than one type of calendered finish. The top and bottom rolls are mounted in roller bearings as are also ten of the chasing rig rolls.

Take any kind of "dope" or stimulant at exactly the same time every day, for several months, and you will form a bad habit.

Select a time each day to concentrate your thoughts on your work, in an effort to make some improvement over your regular routine duties, and within a reasonable time you will have formed a good habit.

* * *

If you are not man enough; not a good manager enough, to save part of your salary, what do you suppose your employer thinks about your ability to save for him when he is trusting you with thousands of dollars worth of supplies?

* * *

Can you take one of your employer's ideas and put it "across" like it was your own?

That is one of the things he is paying you for, you know.—From OLD-TIMER'S Sayings.

"Careful Employees are the Best Safety Device in the Mill"

By R. R. Howard,
National Safety Council

ENVIABLE safety records were attained in two textile plants—a cotton mill and a finishing plant—through the use of the safety programs outlined here. Details are given as to the safety organization, procedure, rules, educational methods, etc. Other mills will find much of value in them . . . .

AMONG all the mills which reported their 1932 accident experience to the National Safety Council, the Bemiston-Talladega, Alabama mill of the Bemis Bro. Bag Company of St. Louis, achieved the unusual honor of having made the largest consistent reduction in the frequency of lost time accidents among large cotton mills during the period from 1930 to 1932 inclusive. During this period they reduced their accident frequency rates by 92 per cent. This mill, for the year 1930, had 21.79 accidents per 1,000,000 man-hours of work. For 1931 they had 13.77 lost time accidents per 1,000,000 man-hours. For 1932, an average of 461 employees who worked a total of 1,199,000 hours, had only two temporary disabling injuries which resulted in only 39 days of lost time, which gave them an accident frequency rate of 1.67, as compared with a rate of 21.79 for 1930. Thus, they made the remarkable reduction in accident severity rates—that is, the number of days lost as the result of disabling injuries per 1,000 man-hours of exposure—from .37 in 1930 to .03 in 1932.

D. L. Wall, superintendent, has described the accident prevention methods of the Bemiston-Talladega Mill which resulted in this remarkable safety record.

"We have a safety council," said Mr. Wall, "which meets once a month. The members of this council are the general manager, assistant manager, the superintendent, assistant superintendent, overseers, and second hands of all departments; also the graduate nurse in charge of our first-aid room, who is secretary of the council. The council's duties are to supervise safety inspection work, to review the causes of all accidents, and to devise methods, if possible, to eliminate similar accidents, review and discuss all recommendations submitted to them and if approved submit them to the general committee for approval. The general committee is composed of general manager, assistant manager, superintendent, and the chief engineer.

Wet floor signs prevent slipping . . . . .

"Each department is carefully inspected once a week by someone designated by the overseer and every fourth week by the overseer himself. Their findings and recommendations are recorded on a safety inspection report blank furnished by the insurance company. These reports are submitted to the safety council once a month for inspection. In addition, we have an inside department safety committee which is composed of the second hand in each department, who is permanent chairman of his respective committee, and also four employees from his department who are appointed by him to serve sixty days. This committee meets every two weeks for the discussion of accidents and to make any suggestions for safety in their department that they see fit.

"Our most prevalent injuries are cuts and bruises of hands and fingers. We insist that all injuries, however slight, must be reported to the first-aid department immediately. Any employee who violates this rule is reported to the superintendent, and is immediately reprimanded or temporarily suspended from work until he realizes the importance of reporting all injuries to the first-aid department. The superintendent investigates all accidents personally, and fixes the responsibility.

"All new employees for the mill are employed by the superintendent, and are instructed by him in the importance of safety practice in their work. In addition to this, when they report to the overseer for work, he instructs them in safety practice in the presence of his second hand as to the particular job to which they are assigned.

"All inturning gears, keyways, and exposed set screws are guarded. Safety non-slip treads are built into all stairs. All elevators are equipped with safety doors which make it impossible to operate the elevator until the doors are completely closed. Shipper rods on all spinning and roving frames are provided with a locking device to eliminate the possibility of the frame being started while someone is making adjustments. Goggles are provided at all grinding wheels and their use is also insisted upon for all hazardous dust blowing work.

"Working under these safety rules and conditions as outlined, we have not had

a lost-time accident in our spinning and carding departments for over two years, and only one in the weaving department for the same length of time. This accident did not occur in the weave room proper, but in the basement of same. It was charged against the weave room, however, as the injured party was on the weave room payroll.

"In view of the fact that we have 32,544 spindles and 700 looms, with approximately 500 employees working full time, with the small number of lost-time accidents we have had in the past two years, we are convinced that talking safety constantly with strict supervision has its effect on the percentage of frequency and severity in industrial accidents as pertaining to a cotton mill.

"We find in any large group of workmen that some are accident prone. Our experience has been that a good sharp talk has proved to be a very good remedy for their 'accident prone' condition."

Another of the national "honor roll" companies, among those who reported their 1932 accident experience to the National Safety Council, is The United States Finishing Company of Providence. In the group of finishing mills, the Silver Springs branch of this company had the lowest 1932 accident frequency rate among large mills. This company, which had an average of 443 employees who worked a total of 1,132,000 man-hours during the year, had only four temporary lost-time injuries which resulted in a total of 97 days of lost time and gave the company an accident frequency rate of 3.53. Their accident severity rate was .09.

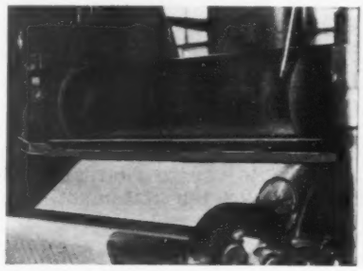
Note safety bumper and sign on this bale chute . .

Harvey Saul, employment director, has described the most important accident hazards with which the company had to contend and the methods used in controlling these hazards.

"The distinction of appearing on the safety honor roll for 1932," said Mr. Saul, "is a source of satisfaction to this company. If our experience is of any value, we are pleased to pass it along. Before giving specific information may I state that while our Silver Springs branch appears to have the lowest frequency rate, and the fourth lowest severity rate, our Norwich branch is second in frequency and fifth in severity, while our Pawtucket branch is fourth in frequency and third in severity. This fact is injected here since competition and friendly rivalry have had an important part in our organized safety efforts.

"Lifting strains," continues Mr. Saul, "are our most prevalent kind of plant accidents and the lifting of large rolls of cloth is required in most departments; and on many operations mechanical devices cannot be used. Falling or slipping on wet floors, from water or dripping colors or dyestuffs, is our second largest cause.

"Careful selection of men and physical examination, together with careful instruction and follow-up in proper lifting, are the methods used to control lifting strains. We supply non-slipping shoes in some departments and use a liberal supply of safety posters as reminders to the help.



Special design nip guard on calender rolls prevent accidents . . . . . .

"Over a ten year period, the number of lost time accidents has diminished consistently each year, from 53 in 1923 to 4 in 1932; and the number of days lost has decreased each year, from 1147 in 1923 to 97 in 1932. Our lowest severity year was 30 days lost in 1930. These figures apply only to our Silver Springs branch, although corresponding reductions have also been made at the other two plants mentioned above.

"The conventional mechanical safety devices are used; however, I do not feel that this plant is guarded any better than the average plant of this nature.

"Our safety organization is comprised of a safety committee, with the assistant manager as chairman, and the divisional superintendents, master mechanic, industrial engineer, employment manager and nurses as members.

"No specific plant inspections are made, as responsibility for all departments is assumed by the members of the committee.

"Accidents are investigated and responsibility is fixed by the committee chairman and the divisional superintendent of the department where the accident occurs.

"Rubber gloves, goggles, rubber aprons, non-slip shoes are some of the protective equipment which we provide.

"Safety training is done by the foreman. The new workman is given a safety pamphlet by the foreman and any special hazards in the department are then pointed out.

"Records of plant injuries are kept in the plant hospital and accident-prone employees are called to the attention of the chairman and divisional superintendent, who interview the workers in question.

"Plant interest is maintained in safety through the safety committee composed of plant officials, who accept the responsibility for accident prevention in the same serious manner in which they perform their other duties, and this interest is naturally reflected through the organization.

"Our own motor truck drivers and helpers are subject to our plant safety requirements plus the

interest through the local fleet contest and that of the National Safety Council. Toward the control of street traffic accidents, we co-operate with the local safety council in its efforts.

"A businesslike interest in safety by our management, together with the added incentive of rivalry between our plants, seems to be the summarized answer to our efforts."

Considerable printed matter is used in the company's safety educational program. One of the four-page folders is entitled "Silver Springs Safety Suggestions." The first page includes a "notice to those seeking employment", signed by H. C. Hess, resident manager:

> "Unless you are willing to be careful to avoid injury to yourself and fellow workers," continues the statement, "do not ask for employment here.
>
> "We do not want careless employees.
>
> "Personal injuries, commonly called 'accidents,' are the results of some kind of failure. More than 80 per cent of our accidents at this plant are caused by personal failure or unsafe practices. To prevent such accidents requires, first, a knowledge of what safe practice is, and then thoughtfulness and co-operation.
>
> "Some general safe practices are given herewith. Additional departmental hazards will be pointed out by the foreman. Our management is in full accord with every effort to prevent accidents and all plant executives are hereby authorized to enforce these and any other measures that are intended to protect our employees."

The circular includes "Safety Suggestions," explained in detail on the following topics: The New Employee; Wear Safe Clothing; Stop Machines to Clean Them; Use Only Good Ladders; Falls on Slippery Floors; Shells and Center Bars; Feed Rolls Will Bite; Elevators; Chemical Burns, Horseplay; Smoking; Lifting; Treatment of Injuries.

A special leaflet is issued on "Lifting," since lifting strain is the most common kind of plant accident. "Many strains and ruptures," states this leaflet, "are caused by employees lifting in an improper way. In lifting you should stand with the feet not too far apart and as near to the object to be lifted as possible. Bend the knees, keep the arms straight and the back as straight as possible and as you lift with the arms, straighten the knees. Thus the legs will assist the back and arms in lifting and strained backs and ruptures will be avoided. Do not attempt to lift a weight which is beyond your strength; apply to your overseer for assistance. Study the picture and learn to lift properly."

Illustration in "Lifting" pamphlet

There is another special leaflet on "Dye House Accidents". This leaflet is very brief, as follows:

"There are not many accidents causing personal injuries in the dye house. Most of you may not recall the last one. Because they are few we may think there are no dangers and fail to use the care that the work requires. Two very serious dye house accidents have occurred in the last few months.

"1. At one of our own plants a jig dyer, wearing rubber gloves, attempted to take out a double edge and both hands were caught under the edges as the cloth wound on the roll. He was drawn around the roll, dashed into the tub and before the machine was stopped he was so badly scalded and battered that he died in a few hours.

"2. This was on a dye pad at a nearby plant. The operator had run off a batch but neglected to stop the machine while drying the batch. When he returned to the machine he placed the end of cloth on the roll, not realizing that the machine was running and both hands were taken through the rolls. One hand was taken off at the wrist and the other hand was badly injured.

"There are dye house accidents and they can be prevented by the use of reasonable care. Always be careful."

The company also has issued an interesting booklet on "10 Best Ways in the Print Room," filled with practical information.

"From the many accidents that have occurred in the print rooms at our different plants," states this leaflet, "it has been found that they can be grouped into ten general causes. Serious injuries have resulted from them. Here are 10 ways of getting injured and 10 ways to prevent these injuries:

"1. *Lifting.* Bend the knees and lift by straightening the legs and keep strain off of back. This will avoid severe back strains and ruptures.

"2. *Falling Weights.* Give full attention to work and handle weights with care and see that drag weight ropes are in good condition to prevent fractured toes.

"3. *Doctor Blades.* Handle with care, keeping mind on work and there should be no bad hand and finger cuts from doctor blades.

"4. *Slippery Floors.* Wipe up dripping colors or water and walk carefully over slippery floors and prevent sprained ankles or backs.

"5. *Climbing.* Whether on machine frames or ladder, always be sure of a good footing. Poor footing on a frame caused a broken back.

"6. *Falling Parts.* Leave no loose parts, tools or gears on machine when starting it up. This may prevent a fractured skull.

"7. *Copper Rolls.* Be sure of proper clearance for fingers when lifting rolls into machine and there will be no mashed fingers.

"8. *Color Boxes.* Get firm grip on boxes so they will not slip out of hands on the feet.

"9. *Scrimp Bar.* Work far enough away in straightening or taking out double edge so hands cannot get caught. All fingers are needed.

"10. *Housekeeping.* Keep wood shells, center bars, skids and sewing machines out of aisle. Have extra gears neatly piled. There have been some bad falls from obstructed aisles.

"One more good idea is to get cuts and bruises promptly treated at the plant hospital and prevent infections.

"There are many excuses but few good reasons for accidents.

"Always be careful. A careful man is the best safety device."

The Scavenger Roll

Does the Spindle Limit?

In large package spinning there was a general idea that the limits of package size depended upon what the ring and traveler would stand in the matter of feet per minute of the traveler. An agent who has perhaps one of the first if not the first real large package spinning installation in the South (it is now about six years old and consists of 2½-inch and 3-inch rings on 7s to 13s) advises us that the spindles and bolsters are giving considerable trouble, while the ring and traveler performance is satisfactory. An agent in another large package mill, equipped with another make of machinery, is also authority for the statement that any attempt to go from his 3-inch to 3½-inch rings would be futile since the spindles are not giving satisfaction on the 3-inch package. Through the first mentioned agent we learned that a machinery builder's representative said they would hereafter put clutch spindles on high speed spindles only under protest, and would confine its use to low speeds and small packages insofar as they could. We wonder if this is the beginning of the end of this last revival of the clutch spindle. Another mill manager told us of his present attempt at spinning 21s warp on 2-inch rings at 10,500 r.p.m. spindle speed; the traverse we have forgotten but think it is 8-inch. It has been impossible so far in his test to keep the bobbins from vibrating a little at the top, and as a result they are wearing out his spindle blades at that point. This information, "passing the buck" of large package spinning limitations from the ring and traveler to the spindle, was a revelation to us.

Believe This?

Pre-shrinking is certainly the order of the day. Recently we were talking with a denim manufacturer producing Sanforized goods, who remarked that he guessed the next thing the customers would want in denims would be rayon. We called on a manufacturer of seersuckers one damp day not long ago and, believe it or not, he had the bottom of his trousers turned up an inch because his seersucker suit was stretching! That's a long stride from a story a friend of ours swears is true. He said he was caught in the rain in a seersucker in the days before preshrinking was heard of and his trousers shrunk so much he couldn't get his feet on the ground.

"Out of the Red—"

Mill treasurers are figuring close these days, so we hear. We heard of one submitting his report at the annual stockholders meeting with the remark that he was glad to say that the mill was at last "out of the red". One stockholder looked at his copy of the statement and asked why it was made out in red ink. "Well", replied the treasurer, "we already had the red ink so we made out the statements with it, for if we had had to buy the black ink we would have gone back into 'the red' again."

The "Practical" Man

We bespeak the consideration of treasurers and others in managerial positions for the practical mill man. This has been brought to mind by a recent visit to a mill where several years ago an office man was elevated to the superintendency, evidently to save a couple of hundred dollars a month. Conscientious and hardworking though that man was, he did not have the insight into practical mill operating problems that comes with the years spent in the mill. A practical man is on the job now, and the production has been increased in a few weeks by 50 per cent and we are advised the eventual increase will amount to 100 per cent. Because we are semi-practical ourselves we feel the practical man does not always get credit for his ability and good judgment. If a man can sit in an office all his life and tell another man what kind of supplies he should use, the kinds of oil, belting, etc., he needs, and in every way dominate the practical workings of the mill, then there have been some very fine, able men wasting their lives by devotion and study and day to day contact with practical operating problems.

It Can Be Done

While on the subject of these practical men, we doff our editorial hat to their progress within the last few years. Perhaps it was necessity that was the mother of invention in this case, but we think industry had as much or more to do with this progress. Every day we see spinning frames 30 years old and older, producing more yarn per spindle than they did when they were new. And not only more yarn but better yarn, and often from inferior staple and character cotton than formerly used. Frames this age are spinning 100s from 1$\frac{7}{16}$-inch Peeler cotton. Just a few years ago a spinner needed 1½-inch to 1⅝-inch cotton for this number. There is only one answer to this: The practical men have been studying their jobs and their equipment and have learned how to make it produce more and better goods.

A Spinning Room "Kink"

Here's a little thing, so little some will laugh when they read about it. In drawing up specifications for new spinning frames a certain very careful mill man had the bottom edge of the samson rail made half-round. Why? Just to keep the sweepers from cutting the brooms to pieces against it. This is one of the most successful mill men we know; we don't wonder that he is.

A Tip for Inventors

Very few of us have escaped the dream that we are inventors. And the fact is that most of us do have sparks of originality and have ideas that, in so far as we are concerned, are original. We believe in encouraging these original ideas, and for that reason this paragraph is inserted. A lot of money is wasted each year by inventors who do not know whether their ideas are patentable nor whether they have any practical value if they are patentable. To have a patent attorney examine previous patents, apply for a patent, and register a patent costs in the neighborhood of $150.00 to $200.00. There are no doubt plenty of honest patent lawyers, but we expect they are not all of that stripe. It is human nature for a patent lawyer to encourage the inventor to make application for patent, in which the lawyer may be absolutely conscientious. However, it is unbelievable that many lawyers are fair judges of the practical value of an invention when applied, say, to a loom. The best procedure, as we see it, is to make an affidavit before a notary public as to the originality of the idea, which protects the invention for approximately two years, then take it up with some experienced, reliable manufacturer of similar or related equipment for his opinion. We don't say the opinion so given always will be unbiased and fair, but a survey of several such manufacturers will reveal the worth of the device. We hate to see the original thinker disappointed and put to useless expense, for then he is likely not to give expression to his next original idea, which may be worthwhile.

Accounting for the Departmental Costs in the Manufacture of Yarn

THIS discussion recommends dividing various expense accounts among different manufacturing departments, and supplying the department heads with this information; also the segregation of village cost from manufacturing cost . . .

A COMPANY having several plants making similar products is in a good position to control department costs by comparing, periodically, the cost of each department with the cost of the same department in each of the other plants, and then by following these comparisons with efforts to bring the high cost departments down to or near the level of the low cost departments. The set-up for such comparisons is not complicated or difficult to make. Each mill ledger must have similar accounts for Building Repairs, Insurance, Lighting, Heating, Power, Humidification, General Stores, Sundries, Wages Direct, Wages Indirect, Management, Village Expense, Water, Taxes, Depreciation.

Even a single plant whose expenses are apportioned to departments, from the Expense Accounts just named, is in position to control them much more easily. Excesses are more readily found, and causes located. In an account system where not all expenses are divided between departments the overseers cannot well be presented with accurate statements of department costs. The overseer, perhaps, is aware of only the labor cost. With a complete department cost system he may be shown what other elements enter into the manufacture of his product. Lighting, heating and power are somewhat under his control, and can be conserved. They will be conserved if the overseer is presented with a fair picture of his comparative cost. Repair costs, also, are within his control.

Let us first see how the general expense accounts are built up.

Building Repairs account is charged with material and labor. It is credited with charges to the departments (opening, picking, carding, combing, roving, spinning, twisting, winding). However, to simplify the illustration, and assuming that there are only three men in charge of all these processes, we will group them. The total account is charged to the departments proportionately, and monthly, according to the floor space in use by each. (See Item 1.)

ITEM 1.—BUILDING REPAIRS	
Debit	**Credit**
General Stores	Opening to Roving
Wages	Spinning
Repairs (from mill shops)	Twisting and Winding
	Shops

Lighting Expense is charged with its power load through the lighting circuit meters, and with maintenance labor, lamps, and other Supplies. This account, also, is credited with charges to the departments on the basis of floor space. (See Item 2.)

ITEM 2.—LIGHTING EXPENSE	
Debit	**Credit**
Current Used	Opening to Roving
Wages	Spinning
General Stores	Twisting and Winding
Repairs	Shops
	Village

Insurance is charged with the earned portions of premium payments, out of Unearned Insurance Premiums account, to which the actual payments have been charged. This element of cost, also, is allocated to departments by floor space. (See Item 3.)

ITEM 3.—INSURANCE	
Debit	**Credit**
Premiums Earned	Opening to Roving
	Spinning
	Twisting and Winding
	Shops
	Village

Heating is charged with fuel, labor and supplies. It is apportioned to departments according to cubical contents of rooms, except that some departments create heat enough in their processes to warm the rooms sufficiently for the workers. Such conditions are allowed for. (See Item 4.)

ITEM 4.—HEATING	
Debit	**Credit**
Fuel	Opening to Roving
Wages	Spinning
Repairs	Twisting and Winding
General Stores	Shops

Power is charged with all its costs in fuel and maintenance if manufactured on the premises, or with current purchased, transformer rental, labor, and supplies. Power that is separately metered to each department is easily chargeable without calculation. Departments that are not so metered are charged with current at a fixed ratio determined

ITEM 5.—POWER	
Debit	**Credit**
Current	Opening to Roving
Transformer Rental	Spinning
Wages	Twisting and Winding
General Stores	Shops
Repairs	

from the connected load in motor horse-power. (See Item 5.)

Humidification takes a portion of the power, and some labor and repair materials. And nowadays, humidification extends through most productive departments, and even storage. It is chargeable to them on a basis of cubical contents, if the rooms are of varying heights, or on a basis of floor space if all are equal in height, and about equally supplied with moisture. (See Item 6.)

ITEM 6.—HUMIDIFICATION

Debit	Credit
Current	Opening to Roving
Wages	Spinning
Repairs	Twisting and Winding
General Stores	

Water Cost is charged out to Power, Humidification, Sundries and Village. (See Item 7.)

ITEM 7.—WATER

Debit	Credit
Filter Plant Supplies	Power
Filter Plant Wages	Humidification
Filter Plant Power	Sundries
Repairs	Village

Supplies are charged to departments as drawn from store room. Machine parts purchased for particular machines and delivered directly to departments, are charged from the purchase invoices. (See Item 8.)

ITEM 8.—GENERAL STORE

Debit	Credit
Supply Purchases	Opening to Roving
Plus Opening Inventory	Spinning
and less Closing	Twisting and Winding
Inventory	Power
	Humidification
	Sundries
	Village
	Building Repairs
	Lighting
	Heating
	Power
	Shops
	Water

Sundries account includes wages and materials for watchmen, doorkeepers, janitors and floor scrubbers, and trucking, storage and shipping. (See Item 9.)

ITEM 9.—SUNDRIES

Debit	Credit
Wages	Opening to Roving
General Stores	Spinning
Repairs	Twisting and Winding
	Shops

Wages Direct are those wages paid for tending productive machinery.

Wages Indirect are those wages paid for supervision or oversight, for cleaning, oiling, material handling, and repairs.

Depreciation is charged to departments at percentages of cost of machinery and equipment and buildings.

Shops are charged with materials and labor used in repairing and maintenance of the property, and credited as the material and labor are charged out to departments. (See Item 10.)

ITEM 10.—SHOPS

Debit	Credit
Building Repairs	Opening to Roving
Lighting	Spinning
Insurance	Twisting and Winding
Heating	Building Repairs
Power	Lighting
General Stores	Heating
Wages	Power
Depreciation	Humidification
	Water
	Sundries
	Village

At the end of each fiscal period, after the entries are made, each expense account balances, the period being monthly, quarterly, or semi-annually—the shorter the better, to check losses; and the shorter the better to know costs for basing sale prices.

ITEM 11.—VILLAGE

Debit	Credit
Repairs	Rents
General Stores	Cost of Sales
Lighting	
Water	
Insurance	
Wages	
Depreciation	

A department account is as shown in Item 12.

ITEM 12.—OPENING TO ROVING

Debit	Credit
Building Repairs	Cost of Sales
Lighting Expenses	
Insurance	
Heating	
Power	
Humidification	
General Stores	
Wages, Direct	
Wages, Indirect	
Depreciation	

Spinning gets its debits from same accounts as Opening to Roving, and its balance is charged to Cost of Sales.

Twisting and Winding gets its Debits from same accounts as Opening to Roving, and its balance is charged to Cost of Sales.

Thus each manufacturing department shows its part of the manufacturing Cost.

The other Costs of Sales, of course, are:

1. Management Cost (Executive, Superintendence, Office).
2. Village.
3. Taxes.
4. Cotton (Market Price $\times \frac{1}{1 - \text{Waste}}$
5. Selling. (Direct or Commission.)

I especially recommend this unusual practice of segregating village cost from manufacturing cost, as such, because it is, strictly speaking, an investment, though in many cases a losing one. If the expense exceeds the income, its effect on the product cost is apaprent without lengthy investigation.

The "Good Old Days"—They Are Always Here!

By a New England Reader

How often we hear mill men say, "The mill business used to be a gold mine, but those days are gone. Now, I remember during the war—", and so on with the same old trite bunk.

Cotton manufacturing was more than a gold mine in the past; it was a bonanza. Cotton manufacturing now offers exceptional opportunities for investing capital. There are plenty of investors who have taken a heavy loss, and owners who would like to "pick up their marbles and go home" who would also like to take me to task for that statement. To those I say: There are notable examples of mills in a sound financial position who are able to make a readily salable product, fill fat pay envelopes, and mail dividend checks promptly, after duly considering taxes, insurance, depreciation and reserves. Furthermore, this is possible only through the use of modern equipment and sound management. A trip through your own mill, and those nearest you, would convince you that there still must be "gold in them thar hills" or it would not be possible for decadence, obsolescence, waste, disorder and general slack management to continue to make ends meet, even after a fashion.

Take a drive through New England—where I am located—see the idle mills, formerly among the world's best. There are many reasons advanced for this condition. A thorough investigation of the real reason would show up such carelessness, trickery, rascality, wholesale plundering, graft and greed, that comparatively speaking the Insulls, Ponzi, Rasputin, Potempkin and Rip Van Winkle would all seem to be but playful children.

If you don't believe that, run an advertisement in this magazine or in the daily newspaper, if you live in New England, offering a few cents a pound for defaulted and worthless mill stocks and bonds. You could get bales of them.

Financing is one of the big problems of all industry today, due to the racketeering of yesterday. But even so, where safety of principal and even possibility of earnings can be shown, money can be raised.

The one-hoss shay mills cannot raise money for modernization, high specialization and national advertising. But their mills are running and they can take stock of the new conditions and resolve to pull themselves out of the hole by their boot straps, which can be done, or they can line up with Sad, Dark & Dreary, Inc., for liquidation and save themselves worry and loss later on.

First, they must set their house in order. If they haven't got the kind of management they should have, a thorough reorganization of personnel should be effected. The day of bluffing and stalling, loafing and passing the buck, is gone forever, if it was ever here. The prosperous mills do not run that way. Superintendents who run their jobs from behind mahogany desks are parasites on the mill payrolls. Overseers who think they can run their jobs from their "holy of holies" are wrong; it can't be done.

Thumbs down on the know-it-alls who judge layouts, cotton, beats per inch, speeds, drafts, roll settings and twists by rule of thumb, proving they are right by telling how long they have been in the business. Every mill should have a thoroughly equipped laboratory and a competent technician. He should have a microscope, a cotton stapling machine, accurate scales, a skein breaker, a single strand breaker, a sliver tester, a roving tester, a roll spacing determinator, a twist counter, speed counters, a good set of drafting instruments—and by all means a conditioning oven. Electrical equipment for making power tests on motors should be available.

The following things the mill directors and management should know beyond the shadow of a doubt.

1. That the cotton being used is neither too poor nor too good for the work.
2. That the fibers are not being excessively abused in the course of manufacture, which reduces the quality of the product or necessitates the use of higher grades or longer staple cotton which costs more money.
3. They should know that their reclaimable, salable and unsalable waste is not excessive.
4. They should know that shafting, belting and oiling practices are not raising their power above a normal figure. They should also know that their power factor is as near unity as possible and that the peak power demand is under control.
5. Their largest investment is in their machinery. They should know that speeds, lubrication and maintenance are so arranged that the maximum life at minimum cost can be expected.
6. That inventories are correct. That payrolls are not padded. These can be assured by fool-proof accounting methods.
7. That insofar as the mill is financially able it takes advantage of new and improved modern machinery and equipment.

Old opening equipment, three-process pickers, junk cards, antique roving, old narrow gauge short draft spinning, mules competing with ring spinning, old slow heavy looms and decadent equipment belong in a museum and not in competition with an aggressive industry.

If the one-hoss shay mills will get in line, they can go on. Another thing they must do to get in line is to pay their employees as high wages as is compatible with a reasonable return on the investment uninflated, and see that their employees and their problems are considered in every move they make.

If the one-hoss shay mills are not willing to join the parade upward and onward, they can continue to chisel wages to compensate for waste and inefficiency, continue to fight labor which has been forced to organize to get justice. Until at last the shay collapses, Sad, Dark & Dreary, Inc., are ready with the sledge hammers now, and "The junk man is coming down the lane".

Textile Code Developments in June

Full Text of Johnson Statement on Strike Settlement, and Terms; and NRA Reports on Cotton Mill Production Requirements . .

THE most spectacular development in connection with the administration of the cotton-textile code under NRA during June was the report submitted to Recovery Administrator Johnson by the research and planning division of NRA, as to the theoretical hours of operation required in the industry to provide for "normal" consumption; and the varying reactions that the report received in the trade.

This report was submitted as a result of one of the terms of settlement under which the threatened general textile strike was called off in a conference between General Johnson and labor leaders on June 2. The United Textile Workers had threatened to call a strike of all textile workers co-incident with the curtailment of 25 per cent in operation ordered by NRA provided the workers were not paid 40-hour wages for the 30 hours of work under the curtailment. One of the terms in the Settlement (see below) provided for an investigation and report on several subjects, including "What productive machine hours are necessary to meet normal demand?"

NRA Report on Hours Required by Cotton Mills . . . .

The report submitted in answer to this question, as prepared by Leon Henderson of NRA, was announced on June 15 in a press release as follows:

"National Recovery Administrator Hugh S. Johnson today made public a report of NRA's research and planning division findings that when normal annual consumption of cotton in the United States is attained, it will require 90 hours per week of productive machine operation—or 10 hours more than the 80-hour maximum, in two 40-hour shifts permitted under the cotton textile industry code. For this determination the per capita consumption during the period 1922-1929 of 26.83 pounds was applied to the present estimated population of 126,000,000.

"The report was prepared in accordance with the terms of the settlement of the recent threatened cotton textile strike and was ordered as a result of the contention of the textile labor leaders that the maximum hours in the industry should be reduced to two 30-hour shifts a week.

"Computing the 'normal' consumption on the most unfavorable basis—including the depression years of 1921, 1930, 1931, 1932 and 1933 and making no allowance for population growth, the report shows that the average annual consumption of cotton has been 2,907,000,000 pounds. This is an average of 57,000,000 pounds per week on the basis of 51 full weeks per year. To attain this average the industry would have to be prepared to handle 10 per cent more than this in peaks or a total of 62,700,000 pounds per week.

"On the basis of 29.6 spindle-hours required to spin one pound of cotton, a total of 1,857,000,000 spindle-hours per week or 38.7 hours per shift would be required to meet the 'normal' annual consumption. Mills operating two shifts a week would require a total operating time of 77.4 hours."

The procedure and calculations used by Mr. Henderson in arriving at the figures given are presented here as a matter of interest:

PRELIMINARY REPORT
PRODUCTIVE MACHINE HOURS NECESSARY TO MEET NORMAL DEMAND FOR COTTON GOODS, AS REQUIRED BY NRA

1. **Normal Per Capita Demand.** Taking the period 1922-29 as "Normal" (excluding the 1921 depression and the present one), mill consumption of cotton averaged 26.83 pounds per capita per year.

2. The population of the United States is now about 126,000,000.

3. **Normal Demand** may therefore be taken at 126,000,000 × 26.83 = 3,380,000,000 pounds mill consumption per annum.

4. **Average Weekly Demand.** With about 51 full working weeks per year, average weekly normal consumption would be 66,286,000 pounds.

5. **Peak Demand.** But in order to attain weekly average, the industry must be prepared to operate at least 10 per cent higher at peaks, or at 72,915,000 pounds per week.

6. **Spindle-Hours.** 29.6 spindle-hours were required to spin one pound of cotton in 1933. Therefore, total spindle-hours required are 1, 962,066,000 in average week and 2,158,284,000 in peak weeks.

7. **Spindle Equipment.** The country's spindle equipment was as follows in April, 1934:

One-shift spindles	6,000,000
Two and three-shift spindles	21,011,200
Total active spindles	27,011,200
Spindles not to be counted on for production	4,000,000
Total Spindles in Place	31,011,200

8. The active spindles can furnish a total of 48,022,400 spindle-shifts without any operating on three shifts.

9. **Average Hours per Shift** therefore equals 1,962,066,000 (spindle hours—average week) — 48,022,400 (spindle-shifts) = 44.9 hours in peak weeks.

10. As the peak allowance is absolutely necessary in order that the year's production equal the estimated normal, the double shift mills must be able to operate 89.8 hours per week, or 90 hours in round numbers.

11. Figuring the normal demand on even the most unfavorable basis, including the depression years 1921, 1930, 1931, 1932 and 1933, and making no allowance for population growth, the normal annual consumption would be 2,907,000,000 pounds. This would require 1,857,000,000 spindle-hours in the peak week, or an average of 38.7 per shift. Two-shift mills would need total operating time of 77.4 hours.

Signed: Leon Henderson.

The report met energetic comment and reaction. The *Daily News Record* reported the sentiment in the New York cotton goods market as discounting the value of the report. It was felt there that the basis of what is "normal" consumption was not sufficiently explained; that any calculations using total figures relating to consumption in an industry whose products go into so many different consumption markets, with varying seasonal requirements, etc., must be fallacious and abstract. It was pointed out that, taking one division of the industry, fine goods mills, for example, have not had the volume of business to justify 40-hour week operation. On the other hand, it is to be pointed out, some other division of the industry might find hours higher than that necessary for supplying a demand.

William E. G. Batty, of Fall River, a prominent labor leader, addressed to General Johnson a telegram of criticism concerning the report. In it he contended that, "Mill 'consumption' is roughly one-third greater than mill 'output' in pounds. Thus it is an error to divide mill consumption in pounds of raw cotton by spindle hours necessary to produce one pound of cotton yarn. Three pounds of cotton 'produce' two pounds of yarn at 29.6 spindle hours per spindle. This equals 59.2 spindle hours to 'produce' two pounds of yarn, though three pounds of cotton are 'consumed'. Thus, discounting one-third from 90 hours, leaves 60 hours actual 'production' time necessary to take care of 'normal' demand."

Thus the possibilities of a protracted and involved statistical argument loomed.

Reverting to the "strike settlement" only brief mention of this was possible in the June issue, page 63. In announcing the averting of the calling of the strike, General Johnson issued a thundering statement which adequately summarized the contentions of the labor leaders, and the disposition of them, and as well clarified the situation concerning the cotton-textile industry, the administration of its code, and established in the minds of mill men several vitally

fundamental points in connection with industrial relations in the industry. General Johnson's statement is reproduced in full now, not as news, but as a matter of record and interest. He said:

General Johnson's Thundering Statement on Settlement of Threatened Strike . .

"The threatened cotton textile strike was conditioned on NRA rescinding its own order restricting machine hours 25 per cent during the usual summer slump, which for the past few years has averaged approximately 25 per cent decline in production. At present there is a very large surplus of goods unsold and disastrous shutdowns were threatened. The idea of the order was to spread these inevitable reductions over the whole industry equally (with exceptions for the smaller mills and certain special cases) and thus to sustain employment on the widest possible basis.

"The order prevented shutdowns for long periods by requiring that reductions be by day instead of weeks or months, except that shutdowns for normal causes, such as inventory, repairs, etc., shall not be prevented.

"No argument against either the wisdom or the equity of this order has been presented. On the contrary, labor representatives in the present conference admitted the necessity for this action and that the strike was not against the order at all, but only to secure a 33 1-3 per cent increase in hourly rates of pay and certain other demands.

"While NRA is willing to do anything it can to compose differences as they arise it cannot proceed to any action under the threat of a strike against its own order. Accordingly, the first article of settlement countermands the strike order.

"Labor representatives in the present conference now concede that the real issues are:

"1. Their right to represent members of their union in collective bargaining.

"2. Certain other grievances alleged to be in violation of the code; but principally,

"3. A demand for an increase of 33 1-3 per cent in the labor element of the cost of cotton textiles.

"There is no question that labor is entitled to prompt and effective relief or any just complaint under 1 and 2, or of the duty of NRA to secure it. The most effective instrumentality we have as yet tried in labor was the President's suggestion in the settlement of the automobile strike.

"There is already an Industrial Relations Board in the cotton textile industry and it has functioned exceptionally well—better, perhaps than any similar set-up; but to bring it into the field of action of the Wolman board its powers require further definition and its membership had to include a representative of labor in the cotton textile industry.

"A basis of settlement was the administrator's agreement to urge upon this industry such definition and amendment of the Industrial Relations Board as would accord with the President's formula in the automobile settlement. Labor accepts this and it is believed that this will go far to quiet the present unrest and prevent future disturbance.

"Labor in this industry is also to be given representation on the labor advisory board and it is to have an adviser to the Government members on the code authority. Studies of all assertions of other general grievances are to be continued.

"So much for the first two causes of complaint. As to wages, it is clear that no such violent increase as 33 1-3 per cent in all wage scales, if any, can be considered at this time. The rise in the price of cotton textiles has been one of the chief consumer complaints.

"Including the processing tax, raw cotton costs have increased 150 per cent. There has been a 70 per cent increase in labor costs due to the code and other influences, and an increase of 94 per cent in cost of labor, material and supplies in cotton textiles.

"A very clear cause of decreased consumption is this increased cost and increased prices which flow from it. In this situation any such increase in cost would paralyze production and employment and defeat the very ends aimed at.

"The course of negotiations has not been helped by the concurrent newspaper debate between the parties to them. Fairness to NRA and to a great industry and to its accomplishments for labor under the NRA compels me to correct several inaccurate statements which appeared in news dispatches yesterday and which were attributed to officials of the United Textile Workers.

"A statement that the administration of the cotton textile code 'through lack of enforcement has brought it to a point of pre-code conditions' is simply without foundation in fact. I know of no code under the NRA that is administered more conscientiously and more effectively than this code has been and is being administered by its code authority.

"The statement that wages 'have been forced down to lower than ever before' is equally unfounded. The very opposite is true. The record shows that the present hourly wage rate as well as weekly earnings adjusted to living costs (real wages) have reached and passed the highest 1929 level. Between April, 1933, and April, 1934, pay rolls in this industry increased over 100 per cent; between March, 1933, and April, 1934, employment increased 34 per cent. Average actual weekly earnings increased between March, 1933, and February, 1934, about 35 per cent.

"The improvement of labor conditions under this code surpasses that in any other industry and, in addition to the wage improvements mentioned, include the wiping out of unfavorable working conditions, such as child labor, unconscionable hours and unregulated stretch-out.

"The improvements have been retained and at the time they were obtained through an NRA code hearing and months of patient work with the Cotton-Textile Institute prior to the code there was no substantial labor organization in the industry.

"For that work the generous co-operation of the industry, with the steady insistence of NRA, deserves credit. In such circumstances insistence that labor in this industry cannot expect protection under the code except through membership in a particular union is also unwarranted. It is not necessary to be a member of a particular union in order to enjoy the benefits of the cotton textile code.

"This is Code No. 1—that of the first industry to answer the President's early observations on the benefit of the principles of NIRA made weeks before the enactment of the law. Strictures on the good faith of that industry are unwarranted and unjust."

The settlement of the strike itself, felt generally to be a vindication of the contentions of the mill point of view, and to contain important concessions on the part of the labor leaders who endorsed it, records the changes in the code set-up resulting from it, as well as the other conditions. It is presented as record:

TEXT OF SETTLEMENT

I. Strike Order to be countermanded without prejudice to the right of labor to strike.

II. One representative of employees of the Cotton Textile Industry to be appointed by the Secretary of Labor to Labor Advisory Board.

III. One Representative of employees of the Cotton Textile Industry to be appointed Labor Advisor to government members on Cotton Textile Code Authority.

IV. Authority of Cotton Textile National Industrial Relations Board to be defined by Administrative Order to include all subjects mentioned in VII hereof. Membership of said Board to be increased by one representative of employers and one representative of employees from the cotton textile industry.

V. If these conditions are accepted I will urge the Cotton Textile Code Authority to accept and agree to abide by the foregoing amendment to the Industrial Relations Board provisions.

VI. Investigation and reports upon the following questions to be made by N.R.A. Division of Planning and Research in conjunction with revised Industrial Relations Board:

(a) What productive machine hours are necessary to meet normal demand (within 10 days)?

(b) What increase, if any, in wage rates is possible (within 14 days)?

(c) Have wage differentials above the minimum been maintained (within 30 days)?

(d) What changes have taken place in man-hour productivity?

(e) The Division of Planning and Research to cooperate with the Industrial Relations Board in completing its studies of the work load for the use of the Board in dealing with all controversies over the stretch-out or specialization system.

VII. The Cotton Textile Industrial Relations Board will continue to handle all pending or future claims and complaints of discrimination, representation, inaccurate entries on pay envelopes, unwarranted reductions in classification, increased stretch-out, alleged violations of Section 7 (a), and all other alleged violations of the Code.

VIII. The seasonal character of the cotton textile business and the necessity for temporary reduction in machine hours from time to time is recognized by the representatives of the labor organizations.

There are several other developments to be recorded and not obscured by the foregoing. The original order stipulated that the 25 per cent curtailment ordered should be made by reducing hours or days in each week and not by shutdowns of one or more weeks. A subsequent modification of this, however, pointed out that, "the effect of this condition is to

require mills to reduce maximum machine hours for each productive machine by day or hours in each week rather than by shut-downs of one week or more. However, if it becomes necessary in the usual way to shut down for general repairs or inventory or for lack of business or working capital, such reduction in hours of operation may be applied against the requirement of the order. The same applies to any customary suspension for vacation purposes."

The classes of mills exempted originally from the summer curtailment order were given in the account on page 62 of June COTTON. In June, further exemptions were granted, which included up to 150 looms in any mill having in place 300 looms or less, and an adequate number of spindles to provide yarns to balance the operation of such exempted looms; up to and including 2,500 cotton spinning spindles in any mill having no looms and having 5,000 or less cotton spinning spindles in place; all looms on velveteens, clip spot marquisettes, cotton damasks and outing flannels (the latter for eight weeks subject to extension), so long as these looms are engaged on the fabrics named. Various individual exemptions were granted and others were denied, under special conditions.

The retail store code as drafted would have practically eliminated the customary operation of company stores by cotton mills under the script provisions of the code. In June the effective date of this code was moved from July 1 to December 1, which allows the mills and others interested in exemptions from the code five months longer time to insist on these exemptions, and the additional time will permit an investigation of the subject by NRA.

NRA Report Denies Wage Increase Needed at This Time . . . . .

On June 29, Leon Henderson of NRA's planning and research department reported on Section VI(b) of the terms of the strike settlement (see page 48). Mr. Henderson's report was to the effect that he saw no basis for a wage raise in the cotton textile scales set by the code. However, he added, "It does not follow at all that no wage adjustments would be in order. On the contrary, it is an acknowledged fact that very great divergencies exist as among various plants, with respect to wages in the higher brackets." But, "increased production, more or less simultaneously, in all industries, would provide increased purchasing power for cotton textiles and is the necessary prior condition for a permanent increase in wages."

The report cited that average hourly wages in the industry are now about 37.3 cents commpared to 22 cents a year ago and between 32 and 33 cents in 1928 and 1929. Average weekly earnings in April were $13.41 according to the Bureau of Labor Statistics, compared to $10 a year ago and $15.65, estimated, in 1929, the report stated, and "as the purchasing power of the dollar is almost one-third greater than in 1929, the $13.41 average weekly earnings in April will buy as much as $17.60 did in 1929."

The report went on to show that in this industry costs of raw material have increased over 100 per cent; the margin available to the industry is thus being squeezed between declining prices of finished goods and increasing costs of raw materials. The margin was about 16.4 per pound of raw cotton handled in April 1934 compared with about 20 cents when the code went into effect, and about 16.5 cents in 1929. "Labor," said the report, "received about 9.5 cents per pound out of the 16.5 cents in 1929 or 57.5 per cent; about 9.5 cents out of the 20.5 cents when the code first went into effect, or 46 per cent, and about 10.2 cents out of the 16.4 cents margin of April, or 62.2 per cent." The conclusions of the report were:

"Under existing conditions, a further increase in wages would involve considerable difficulties, because:

"1. Increased costs cannot be passed along to consumer, except in part, and except at cost of lessened demand and fewer opportunities for employment, as shown by recent price behavior, and recent low levels of cotton consumption.

"2. Margin available for payment of wages has been squeezed between falling finished goods prices and rising raw material prices, including processing tax.

"3. A further increase in costs cannot readily be absorbed by industry, for apparently even present costs have to be met to some extent by dissipation of working capital.

"Conditions under which further increase will be possible: The foregoing conclusions refer only to existing conditions, and labor may properly ask, 'under what conditions can wages—real wages—be increased?' As the cotton workers themselves probably purchase less than one per cent of the industry's output, the small volume of demand for cotton textiles is due almost wholly to the low production and consequent purchasing power in other industries, particularly the capital goods industries. Increased production, more or less simultaneously, in all industries, would provide increased purchasing power of cotton textiles and is the necessary prior condition for a permanent increase of real wages."

NRA reports on the other studies called for in the strike settlement had not been made at the time this was written. They will come next month.

WHERE THE PROFITS MAY GO

(This is a conservative statement of what may actually happen in mills making a profit of 1/8 per yard of cloth. Many mills have recently been earning much less.)

When the firemen save one wheel-barrow of coal the mill gains the profit on 6 looms for a week.

When a weaver makes one cut of seconds the mill loses the profit on 2 looms for a week.

One dead spindle in the card room costs the mill the profit on 2 looms.

Each pound of white waste put into sweepings costs the mill the profit on 2 looms for a week.

When a draw-frame roll is spoiled the mill loses the profit on six cuts of cloth.

Re-drawing one warp costs the mill the profit on 15 cuts of cloth.

When a shuttle is broken the mill loses the profit on the loom for six weeks.

The spoiling of one reed costs the mill the profit on the loom for ten weeks.

In a 100,000 Spindle Mill

When spooler boxes continually contain one pound less than the standard amount of yarn, the mill loses the profit on 40 looms each week.

An average loss of 5 minutes per day through tardiness, "washing up" early, etc., costs the mill the profit on 40 bales of cloth weekly.

When the cloth is apparently of correct weight as baled, but the moisture content is 1% below normal, the loss amounts to the profit on 50 bales of cloth weekly.

When yarns average a half number heavy in a print cloth it costs the profit on 75 bales of cloth weekly.

If, through the cooperation of the overseers and employees, the waste can be reduced 2%, the saving is equivalent to the profit on 800 looms weekly.

A 7% increase in production will reduce the manufacturing cost by one cent per pound on print cloth. One cent per pound of cloth will pay for all the bobbins, shuttles, reeds, harnesses, teaming, oil, belting and roll covering required by the mill.

(The above interesting statement was prepared by Ralph E. Loper Co., Greenville, S. C., and Fall River, Mass. We secured their permission to reproduce it, feeling that it will interest many readers.—The Editor.)

CURRENT TEXTILE TOPICS. . . .

Talk of the Month

AFTER a dreary economic situation of several months, it looks as though business is getting under way for a further swing of recovery toward normal. Beginning early in June, the cotton goods business and other lines of industry showed a tendency to slough off the influence of a stifling trade turn toward a psychology. The healthy feeling, with attendant confident resumption of trading, was fostered by elimination of uncertainties. The change of government attitude in its NRA program has allowed industry to proceed in its co-operation under codes with the evidence of a developing practical basis. The features that have been tried and found suitable at the half-way mark of the emergency period are a solid foundation for the second year.

Getting Down to Co-operation on a Practical, Tried Basis

Normals of business are changing in a constant evolution of world affairs and manufacturers have this uncertainty ever before them in their calculations. The emergency has in a manner doubled this element of business, through the social changes and the new interrelationship of private trade with the government, including politics. Private business has had long years of development, in which a sound foundation of practical measures has been demonstrated, but in which a measure of experiment has always been necessary for progress. During the past year it has run into a new development wherein at the start all was experiment and the practical elements are still only partially realized. But at least the NRA has shown a willingness to drop that which was found clearly impractical and that is helpful co-operation.

Through the past year, meantime, the cotton industry has seen extreme ups and downs as a result of both internal and external affairs. Perhaps one of the reasons for the long spring inactivity was a normal reaction from the unusual business started last summer and ended in the winter. Another undoubtedly was the advanced position of this industry toward co-operation, whereby it was virtually ready at a moment's notice to adopt the NRA plan, in contrast with the slow progress of the government scheme into other fields. The pressure for lower prices this year, with stabilized costs of manufacture, made a difficult and irreconciliable situation for the cotton industry which may be attributed to the backwardness of other groups in making adjustments.

In this situation, obviously still far from any normal, the subject of further restriction of the code schedules was brought up. As we have said before, it remains to be seen what is the logical basis of operation for the cotton industry, and that cannot be determined under emergency conditions. If the Government is to succeed in its ramified plans for the economic salvation of the country, that result will be achieved through restoration of employment and purchasing power. So far the cotton industry has contributed to the relief of the unemployed in more work and wages. But perforce, it has to run on a basis of hours and wages that will allow distributors to make goods prices acceptable to consumers.

During the uncertainty of the spring, when legislation kept everybody on the anxious seat and choked buying, the cotton industry was not able to operate profitably under the fixed hours and wages. It might at some future time be able to spread work further on a shorter week for employees, but only provided the other industries adjusted themselves to a new and unprecedented standard. As it is even now, the question for the coming months is whether the NRA program will bring normal inter-relationships that will allow general pick-up of the recovery on a sound basis. But if recovery of normal is a slow process, taking several years, that does not mean lack of good business altogether and confidence in the fall prospect seems to be widespread.

Such confidence began to appear in the cotton industry right after the promulgation of the order for curtailment through the summer. So long as production was running ahead of demand, buyers saw the possibility of securing concessions and indeed prices got down to unprofitable levels. Stability of prices at a reasonable minimum has become absolutely essential under code conditions with support also accorded to cotton and a processing tax involved. Yet the price situation was become precarious on an inactive buying period which was steadily aggravated the longer it lasted. As expected, the curtailment program immediately strengthened values through eliminating the curse of accumulated stocks and putting on buyers the necessity of looking ahead if they did not want to face the danger of buying too late for their requirements.

Industry, meantime, is subject to problems both of itself and of the Administration. There remains a considerable confusion over the future of price making. Apart from the possibility of monopolistic gouging of the public and the other extreme of ruinous price-cutting, industry should be allowed to go competitive and reap such advantage as it may from individual planning. It will be sometime, moreover, before the NRA finds the practical solution of a great many problems in which private industry is vitally concerned. The progress of such experiments as opening idle factories under government auspices and regulation of practices by prison plants are serious phases of competition that will be anxiously watched, not to mention the great question of labor relationships.

THE New England district turned during the past month to signs of a better business as a welcome change from months of waiting. The chief matter of attention as a break in the protracted period of dullness was the threatened strike which fortunately, and not unexpectedly, was avoided. Coming at the end of what was stated to be a quiet as intense as any during the depression, the possibility of a serious strike was discounted by manufacturers. Thus there was no real excitement among the mill men. In fact, so far as could be judged, the workers for much the greater part had no sympathy with the strike idea.

New England Mill Situation

Under the restricted plan of operation this summer, the production of cotton goods will make a very unfavorable contrast with the output last year. However, the results should not be unfavorable in the long run. The curtailment of operations in the warm weather is seasonal. It affords the workers needed vacations or at least relief from pressure. It is to be remembered that comparisons with 1933 are idle for the boom of last summer was directly contrary to the seasonal trend and had an artificial stimulus in the attempt to circumvent the code. The inevitable reaction came.

Starting the year 1933 at a low rate, the cotton consumption in New England mills had an expansion for the first six months of more than 80 per cent, according to recent figures of the Federal Reserve Bank of Boston. This was too much and the resultant slowing up in the second half of the year became so pronounced that the rate was lower for the last quarter than at the start of the year. The bank report notes that the expansion in the first four months of 1934 was somewhat similar to the course of gain the first half of 1933 in New England. However, this was based on broad buying for a short time the first of this year. A prompt retrenchment on the danger of unsettling accumulation created a healthier position and should help the later months of this year.

Among the mill changes is an extension of the group, the Berkshire Fine Spinning Associates, by the acquisition of plant of the Warren Manufacturing Company, of Warren, R. I. By the sale of this property, another New England plant which was long idle because of the textile decline in this district ended last year, will be brought back into productivity. This is a moderate addition to one of the leading groups of the country, the Berkshire Fine Spinning Associates having several units of cotton manufacture in Rhode Island, Massachusetts and other States.

Final papers were passed in June for the transfer to the Kendall Company of Boston of the well-known Holmes Manufacturing Company of New Bedford. Joseph Murray, former Holmes agent, was announced to be manager and James Bradbury superintendent. New machinery to include 800 looms purchased from the General Cotton Corporation will convert the plant from a yarn to a weaving mill. It was stated that the product probably would be gauze. The Kendall company is a prominent manufacturer of surgical textiles and allied products; also dry goods and industrial textiles such as cheesecloth, curtains, interlinings, crinolines. The Kendall plants number four in Massachusetts, five in the Carolinas, one each in Rhode Island, Illinois and Indiana.

It is reported that the Hoosac Mills, which recently brought a case against the government on the processing tax, claiming unconstitutionality of the same, is making notable progress under receivership. The payroll was reported increased from $31,740 to $43,494 in six months previous to June. Production had been lifted from 554,880 to 984,360 yards since former United States Senator William M. Butler and James A. McDonough were made the receivers last October. The corporation has a group of mills in New Bedford, North Adams and Taunton, Mass. It employs nearly 3,000 workers.

W. T. Burgess, over sixty years in the mill business, was recently reported as retiring, his last position being superintendent of the Chicopee Manufacturing Corporation, Chicopee Falls, Mass. He started at the Wamsutta Mills, New Bedford, in the early '70s and became overseer in various New England mills, serving for 35 years in the spinning, spooling, warping and twisting departments of the Manville-Jenckes Corporation. His superintendency at Chicopee Falls lasted nearly 14 years.

COMMENT ON THE COTTON MARKET

New Orleans, June 15, 1934.

EXCEPT for temporary moderate recessions the trend of the cotton market during the past month was upward, spot values today, compared with one month ago, showing an advance of about $3.45 per bale. May fertilizer sales were less than generally expected, there were more of private crop estimates, some of which were smaller than some of previous forecasts, wheat advanced sharply because of the drouth in the grain region, the threatened cotton textile mill strike was avoided, there was entirely too much rain in the Atlantics, Texas reported that all crops and ranges need rain, there were advices as to boll weevils appearing and increasing in many sections of the belt, and silver legislation made favorable progress. There was not much in the way of unfavorable developments, except labor troubles, most of which were settled or in prospect of settlement, and there was the attitude of foreign governments as to meeting their war debt payments, and the German moratorium had to be considered. Nevertheless, general business held up pretty well, far better than generally anticipated, except that an agreement was reached to curtail domestic cotton mill production 25 per cent, which started June 4, to continue for twelve weeks.

Some time ago the impression prevailed in some quarters, especially abroad, that much of government controlled cotton would be available when option contracts mature at the close of the present crop year, which was looked upon at that time as a bearish feature. Thereafter the government gave assurance that it would not force its holdings on the market when option contracts mature at the close of the present crop year. In the meantime the Commodity Credit Corporation extended the maturity date on all ten-cent government loans on cotton from August 1, 1934, to February 1, 1935, unless ⅞-inch spot cotton reached 15 cents a pound on the New Orleans market. Subsequently much importance was attached to the introduction of a bill in Congress to amend the Agricultural Administration Adjustment act to enable the Secretary of Agriculture to acquire control of cotton on which ten cents a pound loans have been made by banks, so that it also may be held for

higher prices. As a result, the situation, so far as government controlled cotton is concerned, seems to have assumed a different complexion since it is apparently the policy of the government to increase its holdings, with the view of holding for a better price.

The following data concerning recent estimates as to the worlds consumption of lint cotton, and the worlds stock of American lint, will be found of interest:

Bales—	This season	Last season
World's consumption of American, in April	1,148,000	1,135,000
World's consumption of foreign, in April	1,012,000	850,000
World's consumption of all kinds, in April	2,160,000	1,985,000
World's consumption of American, 9 months	10,498,000	10,423,000
World's consumption of foreign, 9 months	8,660,000	7,674,000
World's consumption of all kinds, 9 months	19,158,000	18,097,000
World's stock of American, April 30th	13,848,000	15,556,000
Of which was in the United States	9,860,000	11,728,000

While the stock in the United States at the close of April was comparatively large compared with normal, it was nearly two million bales smaller than on corresponding date last year, and because of the government having control of so much cotton, offerings have continued comparatively light, and largely for this reason, and too much rain in the eastern belt and insufficient moisture in Texas, the market during the past month did better than to hold its own by advancing sharply. Of late, however, owing to beneficial rains in Oklahoma and some improvement in climatic conditions in the Atlantics and the central belt, light exports, small spinners takings and domestic mill curtailment, the market of late lost part of the advance in values.

BRITISH BOARD OF TRADE REPORT FOR MAY

Year—	1934	1933	1932
Exports of yarn, pounds	11,000,000	11,000,000	13,000,000
Exports of cloth, yards	151,000,000	169,000,000	201,000,000

CENSUS REPORT FOR MAY

United States— Bales—	This season	Last season
Consumption of lint cotton in COTTON GROWING STATES, in May	416,911	513,954
In New England States, in May	88,796	90,376
In all other States	14,058	16,231
In the United States	519,765	620,561
Consumption of lint cotton in Cotton Growing States, 10 months	3,968,670	4,036,776
In New England States, 10 months	864,854	672,474
In all other States, 10 months	144,248	130,243
In the United States, 10 months	4,977,772	4,839,493
Mill stocks, May 31st	1,421,428	1,392,209
Stocks in public storage and warehouses, May 31st	6,570,664	7,323,146
Stocks in mills, public storage and warehouses, May 31st	7,992,092	8,715,355
Stocks in mills, public storage and warehouses, April 30th	8,686,687	9,523,131
Active spindles during May	25,891,366	24,609,908
Active spindles during April	26,450,750	23,421,680

No encouragement was derived from the British Board of Trade Report for May or from the U. S. Census consumption report for May, and the outlook is not bright for domestic consumption or for Manchester, at least for the remainder of the season owing to the summer curtailment program of American mills, and a late report from Manchester that a cotton spinners association is being organized there, and that it is now proposed to centralize production, regulate the output and price by quotas and eliminate surplus spindles. The scheme, which is voluntary and dependent on support of 90 per cent of the spinners, will be submitted to the Federation shortly.

Athens, Ga., near the close of May reported that the appearance of the boll weevil has been reported to the University of Georgia agricultural extension service from every section of the state. College Station, Texas, reported that the emergence prior to June 1st was 14.4 per cent. Recently Atlanta, Ga., advised that the State Commissioner of Agriculture estimates that the Georgia cotton crop outlook was reduced at least 20 per cent by the rains, and College Station, Miss., reported lately: "During the past week State Plant Board inspectors made examination of cotton fields on 67 farms in 22 counties and found weevil on 40 of the farms. The average number of weevils per acre on the infested farms was 200, comparing with 145 last week's report and 75 for the same week last year.

TOTAL AVERAGE RAINFALL IN TEXAS IN INCHES

Year—	1934	1933	1932	1931	Normal
For May	1.86	3.93	2.90	2.40	3.71
November 1 to May 31	16.97	15.58	20.91	17.68	17.07

Washington's weather and crop summary for week ended June 12th—"The weather was again rather unfavorable for the cotton crop over considerable sections of the belt. In eastern portions rains continued too frequent, promoting sappy growth of plants, preventing proper cultivation and in the southeast favoring weevil activity. Fair, sunshiny weather is badly needed in this area. In the central states of the belt the weather was generally more favorable, though there was enough rainfall to favor weevil in parts of Alabama, Mississippi and Louisiana. However, in this area and in Oklahoma the weekly progress ranged from fair to excellent. In Texas the condition of cotton continues fair to good, but there is a noticeable retardation in growth in most places because of dry weather. In this state May had only about half the normal rainfall, and so far June has had much less than half the normal."

What the Southern Mills Are Doing

Lanett Bleachery & Dye Works, Lanett, Ala., have installed printing machines and auxiliary equipment purchased from Rice, Barton & Fales. Two of the machines have been put in operation and another will be started shortly.

Pepperell Mfg. Co., Lindale, Ga., have let contract for the construction of a $100,000 dye plant, in which the continuous indigo dyeing equipment manufactured by Cocker Machine & Foundry Co., Gastonia, N. C., will be installed. Batson-Cook Company, West Point, Ga., are the contractors for the construction; Robert & Co., Inc., Atlanta, Ga., are the engineers.

Capps Cotton Mill, Toccoa, Ga., has been sold to T. A. Capps and Charles D. Goodroe, of Atlanta, for a price of $25,000. It is understood operations will be resumed.

Wiscassett Mills Co., Albemarle, N. C., have installed 35,000 spindles of long draft equipment furnished by Saco-Lowell Shops. Efird Mfg. Co., of Albemarle, also have installed several thousand spindles of this equipment.

Smithfield Spinners, Inc., Greenville, N. C., has been organized to manufacture and sell all kinds of fabrics. The authorized capital stock is $100,000. Mrs. M. R. Long, Mrs. Alice G. Long and Mrs. V. C. Baker, all of Greenville, are the incorporators.

A 70x100 foot brick and steel addition to the warehouse is being made by Boger & Crawford, Lincolnton, N. C.

Spofford Mills, Inc., Wilmington, N. C., have completed the construction of a concrete swimming pool, 25x75 feet, for the use of their employees.

An addition is being erected at the plant of Elliott Knitting Mills, Hickory, N. C.

Pine State Knitwear Co., Mount Airy, N. C., has moved into larger quarters and added knitting machines.

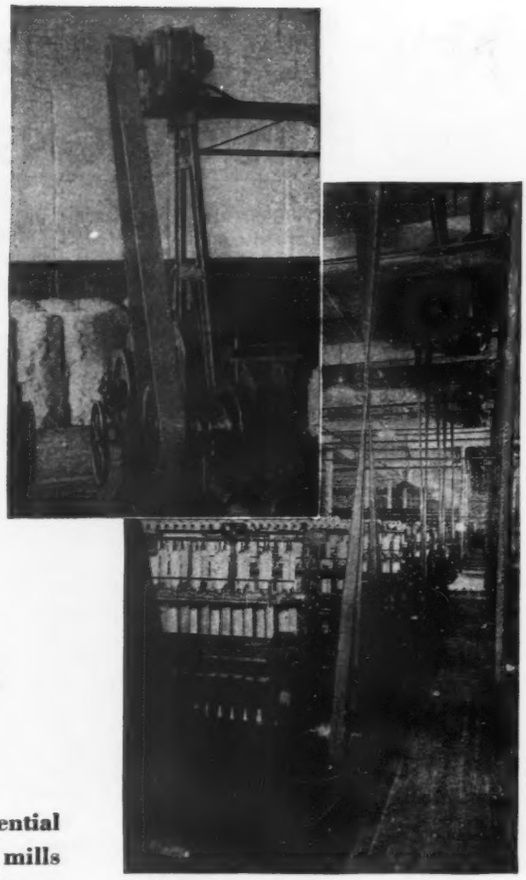
Old Fort Hosiery Mills, Old Fort, N. C., have been organized by D. W. Adams and associates. G. C. Stevens, formerly of McPar Hosiery Mills, Marion, N. C., is superintendent.

Redmon Hosiery, Inc., Chattanooga, Tenn., have filed papers of incorporation. W. R. Redmon, I. G. Phillips and F. H. Semmes are the incorporators.

Charles H. Bacon Company is dismantling its plant at Greeneville, Tenn., and moving 119 seamless knitting machines, 84 ribbers and 14 loopers to its plant at Morristown, Tenn.

North American Rayon Corporation has been organized to supersede the American Bemberg Corporation and American Glanzstoff Corp., with plants at Elizabethton, Tenn.

IT HOLDS THE SPEED!



Mill-proved Goodyear COMPASS (*Cord*) Endless Belt keeps tensions even

●

The most nearly stretchless belt made

IN SPINNING operations where uniform speed is absolutely essential for uniformity of product, the experience of scores of mills proves that no transmission belt can compare with Goodyear COMPASS *(Cord)* Endless.

It holds the speed—*maintains even tensions*—because it is the most nearly stretchless belt made; a truly endless belt developed out of Goodyear's first-hand knowledge of textile needs.

Goodyear is represented in the South by authorized Goodyear Mechanical Rubber Goods Distributors conveniently located with relation to your mills and able to supply promptly all Goodyear Mechanical Rubber Goods for the textile industry

Made of heavy cords spiraled CONTINUOUSLY, bound with Goodyear rubber, and enclosed in a tough fabric envelope that is double on the pulley side — *the load-carrying part of the belt has no splice!*

This unique construction insures long, trouble-free service, even when operating over small pulleys at high speeds.

SPECIFIED BY THE GTM

Other mill-proved Goodyear products for the textile industry are: THOR Belt (Seamless), Emerald Cord V-Belts in matched sets and sturdy Goodyear Air Hose for clean-up purposes. For better service, all are accurately specified to your individual requirements by the G.T.M.—Goodyear Technical Man. To secure his experienced advice, just write Goodyear, Akron, Ohio, or Los Angeles, California—or call your nearest Goodyear Mechanical Rubber Goods Distributor.

THE GREATEST NAME IN RUBBER

NRA CODE

GOODYEAR

TEXTILE BELTING

MADE BY THE MAKERS OF GOODYEAR TIRES

NEW TEXTILE EQUIPMENT AND PUBLICATIONS . . .

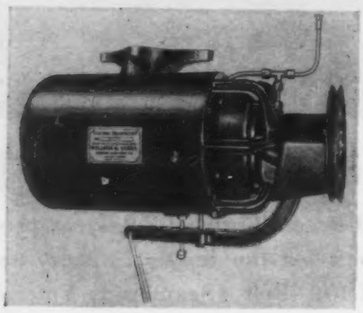
New Flexible Couplings

A new general purpose coupling has been brought out by Westinghouse Electric & Manufacturing Co., East Pittsburgh, Pa., and is described in a publication entitled "Type WH Flexible Couplings". Designed for use in connection with gearmotors, speed reducers, and other industrial drives, it is explained, the new product requires no lubrication, is easily inspected and is safe in operation. In the leaflet mentioned the distinctive features, construction, ratings and dimensions of the coupling are described.

* * *

Electric Transmitter for Sewing Machines

Willcox & Gibbs Sewing Machine Co., 658 Broadway, New York City, have announced an electric transmitter



Sewing Machine Transmitter

intended primarily for operation of individual industrial sewing machines. The source of power is a Westinghouse ⅓-hp. motor, the units being available for all standard electrical circuits. The transmitter embodies the disk type of friction clutch, selected for its smooth action. Cork is utilized as a friction material because of its smooth action, long life, friction qualities and resistance to oil, it is explained. Driving and brake disks are of ample size, each disk having approximately 14 square inches of contact surface. These oversize disks are designed to promote long life and positive drive at full speed, it is explained.

The driving member of the clutch is keyed to the motor armature shaft, but is free to slide endwise thereon, which, it is explained, allows the motor to utilize its full power for driving the clutch, there being no end thrust against the motor shaft. The clutch driving member carries two cork friction disks, one fastened to each side; two pressed-steel drums completely enclose this driving member. When a foot treadle is depressed, pulling down the operating lever, a strong, flat, four-arm spring goes into action squeezing the two steel drums connected to the pulley shaft against the cork disks attached to the driving member, thereby transmitting the power of the motor to the pulley shaft. When the treadle is released, a coil spring on the under side of the unit pulls the operating lever, overcoming the action of the flat spring and stopping the rotation of the pulley by applying pressure to a brake disk attached to the pulley shaft. However, the stopping of the machine may also be effected by the operator by putting a slight backward pressure on the foot treadle with the heel.

All rotating parts of the clutch and motor are completely guarded. A complete range of pulleys, from 3 to 7-inch diameter, varying by ½-inch, for practically any machine speed, is available.

* * *

New Quiller Tension

Sipp-Eastwood Corporation, Keen & Summer Sts., Paterson, N. J., has produced and patented a new quiller tension with a number of interesting features. This new tension, it is pointed out, is so designed that it may be set once and remain constant thereafter from the beginning of the quill to the end, regardless of whether the spool be full or small; no unrolling attachment is employed, with no strain on the yarn as a result. The new device, it is explained, eliminates the problem

New Quiller Tension

of loose thread on the quill with a full spool and tighter tension as the spool grows smaller, which would result in loose and tight filling in the cloth, showing up as shiners in rayon; breakages which would show up as knots in the cloth, etc. With no revolving spool and compensating wires, there is no inertia to overcome in the new tension, it is pointed out.

Increases in production through the use of the new tension are reported, users stating that 40 spindles equipped with it do more than 60 spindles without it.

The manufacturers explain that it is not necessary to change the new tension for different types of threads, eliminating the need of different sets of attachments for use on different types of yarn. Also, they explain, with the new tension the girl can start the thread with one hand on the starting lever, and the other hand is free, and that the spindle can be started immediately at full speed. Paterson Silk Machinery Exchange, 16 Spruce St., Paterson, N. J., are the company's selling agents in the northern states.

* * *

Sta-Put Lubricants

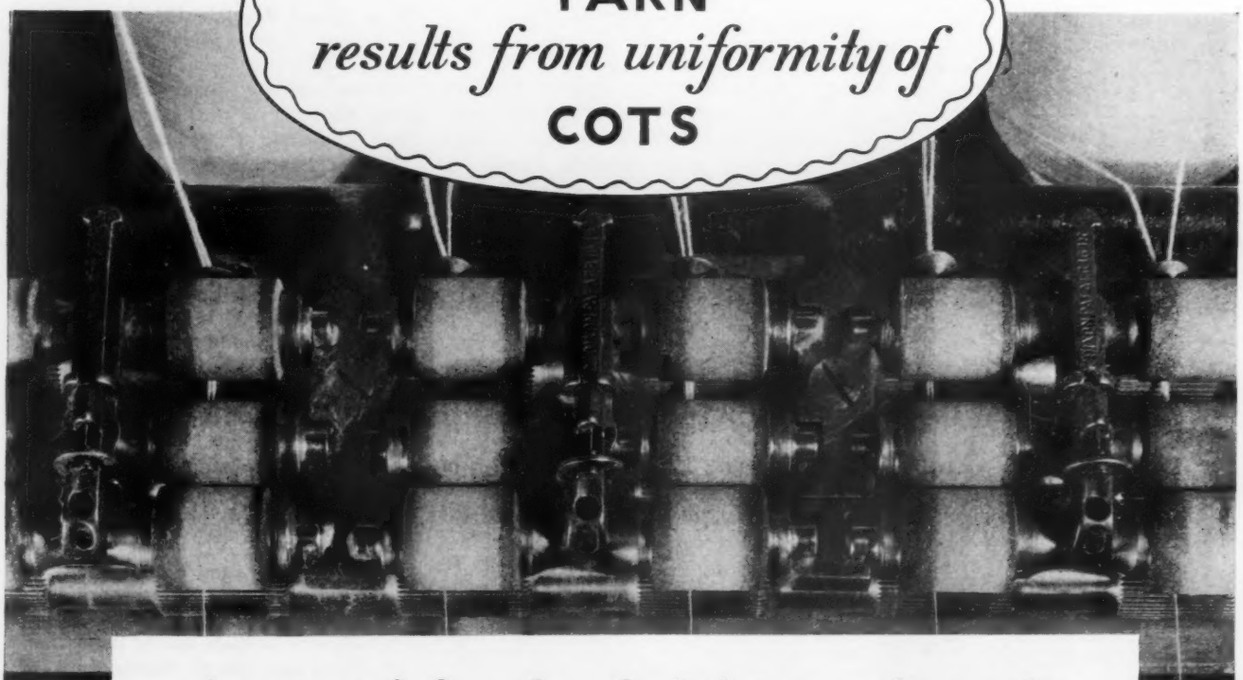
E. F. Houghton & Co., 240 West Somerset St., Philadelphia, Pa., have announced an important development in their line of oils and greases bearing the name "Sta-Put". These products were so named, the manufacturers explain, because their research laboratories succeeded about two years ago in making great improvements in mineral oils; the initial step being to increase the ability of the oil to stay in place, by treating it with selected mineral hydro-carbons. The staff has perfected a further step, it is explained, by chemically combining certain other hydro-carbons which greatly increase the load-carrying capacity of the oil. The lubricity, or combined properties of this product, not only increase the ability of the oil to stay in place but increases its film strength to reduce wear and maintenance. The makers further state that shock loads or sudden reversals of strain on a bearing may be adequately met with comparatively light weights of oil, without adding any materials to cause a change in the oil's appearance or ability to be used as other mineral oils; and, further, without deterioration or thickening in use or storage.

* * *

Variable Speed Pulley

Winfield H. Smith, Inc., Springfield, Erie County, N. Y., have added a new variable speed pulley to their line of speed reducers and transmission equipment. The new product, designed for operation at motor speeds, consists of two conical sections or two half pulleys with slots in their conical faces permitting them to interlock and giving a cog or positive drive effect to the variable speed pulley. Each half pulley is mounted on a bushing with a spiral key which engages with a spiral groove in the bore of the pulley. The bushing is keyed or setscrewed to the motor shaft. As the base of the motor

Uniformity of
YARN
results from uniformity of
COTS



Armstrong's Seamless Cork Cots are always the same quality . . . and so is the yarn produced

IT'S significant that many mills making sale yarns and tire fabric yarns—mills that *must* have uniform quality in their products—are "on cork." Why? Because the drafting surface of Armstrong's Seamless Cork Cots is always the same. Cork cots are *not* simple products of nature, are not subject to the irregularities of unfabricated natural materials. Uniformity is *built into* them. And *uniform roll coverings assure uniform yarns.*

But—important as it is—that's only *half* the story! In addition, *these cots save from 50% to 75% on roll covering costs!* Figure for yourself how much you'll be ahead at the end of the year.

We'd like to give you full information. Address Armstrong Cork & Insulation Co., Textile Division, 923 Arch Street, Lancaster, Penna.

Armstrong's Seamless Cork Cots

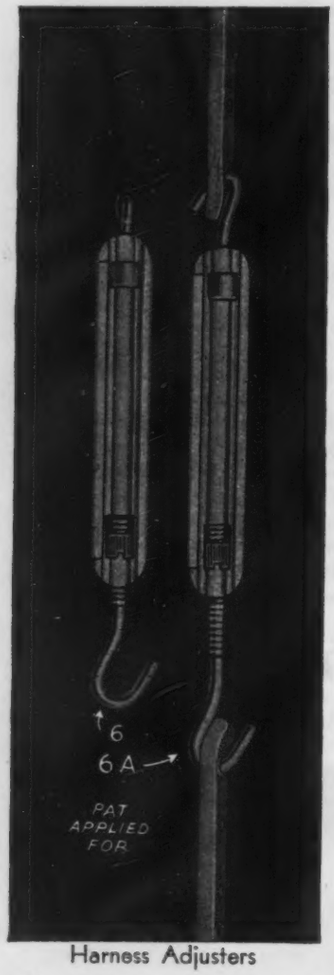
FOR SPINNING AND CARD ROOM ROLLS

is moved back and forth the two half pulleys will move together or separate, causing the belt to run on a small or large diameter of the pulley. The variation in speed is obtained by being able to drive from either the smallest or largest diameter of the pulley or from any intermediate diameter. A standard v-belt and standard v-belt pulley for the driven pulley are used, the center of the two half pulleys being always in line with the center of the driven pulley.

* * *

New Harness Adjuster

Steel Heddle Mfg. Co., 2100 West Allegheny Ave., Philadelphia, Pa., and Greenville, S. C., have marketed a new positive-locked and quickly adjustable harness adjuster, known as No. 6 and No. 6-A harness adjusters. The new product is simple in design and con-



Harness Adjusters

struction, the length being readily adjusted by lifting the lock nut from the seat and giving the necessary turns to the regulating screw and then dropping the lock nut in place which locks it to such a degree that it cannot be moved by vibration or any causes other than the human hand, it is explained. A variation of 1¾-inch in length and any degree of fineness is possible with the adjuster, which is furnished in an attractive serviceable rust-proof finish. No. 6-A is made with a hook on both ends and No. 6 with a hook on one end and an eye on the other; leather straps on both ends if desired.

* * *

Yarn Cleaner Patent

The late Cullen L. Lytton, while superintendent of the Flint Mill, Gastonia, N. C., devised a yarn cleaner on which Mrs. Hettie S. Lytton, as administratrix of his estate, has secured a patent, according to Paul B. Eaton, patent attorney, Charlotte, N. C. The device consists of placing a comb with pointed teeth below the line of travel of the yarn, so that when a heavy place or fluffy place in the yarn occurs, the yarn will be engaged by the teeth to break it to prevent the imperfection from passing. The device is particularly applicable to heavy places in the yarn, it is explained, because by having the pointed teeth below the yarn the heavy place or knot will cause the yarn to sag downward and engage the teeth. The device is being manufactured and sold throughout this country.

* * *

Instant Water Heater

Improvements have been made in the instant copper tube steam water heater, now a product of The Johnson Corporation, Three Rivers, Mich., by increased baffling which includes the addition of a spiral in the cold water inlet pipe. The patented principle involves the use of concentric steam and water chambers made of iron pipe size copper pipe. The cold water entering the heater passes spirally through the central chamber which is surrounded by steam in the second chamber, returning spirally in a thin sheet along the outside wall of the steam chamber creating a high velocity, turbulence and heat transfer rate. A new line of 5-inch heaters has been added to the series, completing the range of capacities from 80 gallons to 6,000 gallons per hour for steam pressures up to 150 pounds.

* * *

"Short Cuts to Power Transmission"

A 72-page illustrated text-book entitled "Short Cuts to Power Transmission", has just been published by the Flexible Steel Lacing Company, 4607 Lexington St., Chicago, Ill. The book is a thorough revision, with new chapters added, of a book with the same title which the company has published in years past. It contains all information needed in solving any ordinary belt transmission problem, a discussion of belting of all types, and material on the subject of belt joints and good transmission practice, besides a mass of useful associated tables and data. While treating of engineering subjects, the book is written in a clear manner for the layman as well as the engineer.

* * *

New Speed Reducer Catalog

A new 32-page illustrated catalog No. 1415, with horse-power and other engineering data, dimension diagrams, etc., has recently been issued by Link-Belt Company, 910 S. Michigan Ave., Chicago, Ill. The book covers single, double and triple reduction units of herringbone gear type; also a full line of flexible couplings.

* * *

pH Explained for Laymen

Detergent Products Corp., Box 1725, Atlanta, Ga., manufacturers of cleaning compounds for textile uses, have prepared and published an interesting book, "Theory of the Use of Alkalies and Control of pH", written by the company's president, D. B. Osborne, and prepared in a simplified manner for the benefit of the layman.

* * *

Synchro Diaphragm Valve

Bristol Company, Waterbury, Conn., have added a new synchro diaphragm motor valve to their line of indicating, recording and control instruments. It is intended primarily for use on air operated control systems. The valve responds immediately to air pressure changes, and the stem position for a given pressure is the same whether pressures are rising or falling. There is no hysteresis or friction loss in the top movement, it is explained. These features, it is pointed out, are accomplished by correct design of the rubber diaphragm and top, precision measurements in the manufacture and assembly of the steam guides, accurate alignment and proper spring construction. Ample space is provided for renewing steam packing without disturbing the adjustments.

* * *

Textile Lubrication Methods Discussed in Texas Co. Publication

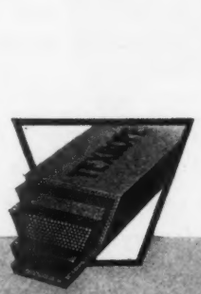
The June 1934 issue of "Lubrication", a monthly magazine published by The Texas Company, 135 East 42nd St., New York City, features the subject, "Textile Machinery—Improvements in Design and Methods of Lubrication", in a leading article. The article is illustrated by cuts of some of the more commonly used textile machines, and is an excellent treatise on the subject of lubrication of this equipment. It covers adequately the factors in textile mills which affect or are affected by lubrication, such as temperature, water, acids, humidity, etc. Copies of this discussion are available upon request to The Texas Company.

Why Experiment

TEXROPE Multiple V-Belt Drives have enabled many textile mills to turn out better products at lower cost because they offer outstanding economies in production as well as less maintenance expense. They are clean, yet unaffected by dirt or moisture. Starting and acceleration are smooth . . . no jerks . . . no slip . . . no backlash. Texropes protect the motor by absorbing shocks and vibrations. Bearing troubles are at a minimum. Continuous operation is assured and costly shutdowns disappear.

Texrope Drives require no belt dressing . . . no greasing . . . no oiling. The belts are unusually long lived. Correct tension is easily maintained and adjustments are seldom necessary.

Thousands of Texrope Drives are now operating satisfactorily in the Textile Industry. Why experiment? They have proven successful during the past decade. *Allis-Chalmers Manufacturing Co., Milwaukee, Wis.*

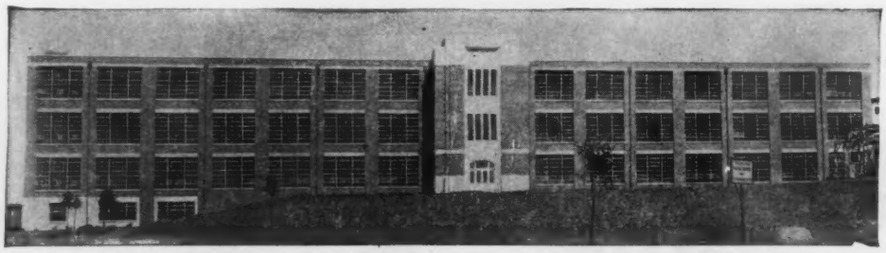


The accuracy with which the belts fit the grooved sheave has a decided effect upon the drive. Texrope Belts, made for Allis-Chalmers by B. F. Goodrich, are formed in precisely machined molds. They seat perfectly in the grooves of Texrope Sheaves.

INSIST ON GENUINE

TEXROPE DRIVES

ORIGINATED AND PATENTED BY ALLIS-CHALMERS MFG. CO.



SPEED and EFFICIENCY

Saved Money in Constructing the Martha Mills

An example of the efficiency of Batson-Cook construction is shown in the recent addition to Martha Mills for The B. F. Goodrich Company of Silvertown, Georgia. On the 45th working day after contract was let, machinery was being installed in this addition consisting of 153,427 square feet of floor space. Such speed, combined with Batson-Cook experience, reliability and attention to detail, insures economy and satisfaction.

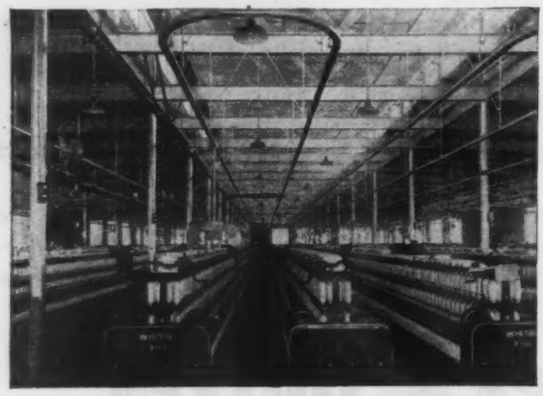
We take pride in having repeatedly served The B. F. Goodrich Company as well as many other representative industrial organizations.

BATSON-COOK CO.

« « WEST POINT, GEORGIA » »

another typical Clayton electrical installation!

at the
MARTHA MILLS
Silvertown, Ga.
for
The B. F. Goodrich Co.



Robert & Co., Atlanta, Ga., Engineers.

ALL power, lighting and other electrical equipment at the Martha Mills was installed by the J. M. Clayton Company, not only in the third and new addition just completed, but also in the original unit built in 1926 and the second unit in 1929.

This is a typical Clayton installation, which meant efficient cooperation that the job could be completed in the shortest possible time; an installation carefully executed by experts, insuring permanent and satisfactory service.

J. M. CLAYTON CO.

Contracting Electrical Engineers

ATLANTA, GEORGIA

BAHNSON HUMIDIFIERS

selected by MARTHA MILLS for their new addition!

The selection of equipment for the new addition of the Martha Mills at Silvertown, Ga., was the result of scientific planning and a wide and exhaustive study of the most modern and efficient equipment the market afforded. It is natural that the BAHNSON SYSTEM of HUMIDIFICATION, including master controls, was installed.

The New Bahnson System backed by 30 years' experience

embodies the latest improvements in modern humidification. Textile mills are finding it a dividend-paying-investment to discard obsolete humidifying equipment and reduce manufacturing costs with an up-to-date Bahnson System. Full details will be sent gladly on request.

The Bahnson Co., Winston-Salem, N. C.

GOLDENS' V-BELT SHEAVES

LICENSED BY ALLIS-CHALMERS UNDER GEIST PATENT NO. 1,662,511

The High Quality of our V-Belt Sheaves is due to:

1. A selection from extensive pattern equipment to insure well designed Sheaves, both as to appearance, and for relief of excessive internal strain.
2. A use of proper mixture of iron to insure high strength in the Sheaves, and a smooth close-grained surface for belt contact.
3. An accuracy in machining to insure correct dimension of finished surfaces, including grooves carefully turned for whatever make of Licensed V-Belt is to be used.

GOLDENS' FOUNDRY & MACHINE CO., COLUMBUS, GA.

ALSO MANUFACTURERS OF:

Hangers
Pillow Blocks
Shaft Couplings
Cast Iron Pulleys
Ball Bearing Loose Pulleys
Ball Bearing Blower and Fan Boxes
Size Kettles
Continuous Dyeing Machines
Raw Stock Dyeing Machines
Dye Liquor Tanks
Cast Iron Tanks
Cloth Inspecting Machines

TIMELY NEWS ITEMS WITH A TEXTILE SLANT . . . .

Textile Chemical Products Company Enlarges

Textile Chemical Products Company, Greensboro, N. C., recently enlarged their manufacturing facilities and sales organization and announce that they now cover the entire manufacturing trade, offering a complete line of sizes, oils, soaps and other textile chemicals. W. L. Gaffney, for the past 14 years engaged in a sales managerial capacity with a large soap manufacturer, is in charge of the soap department. Joe Foil, a graduate of the N. C. State Textile College, who has been selling textile chemicals for the past six years, will devote his time to sales and service of sizing compounds. Textile oils will be handled by Thomas A. Mott, Jr., a graduate in textile chemistry, with an M.S. degree in textile oils. He has been assistant to Professor A. H. Grimshaw at N. C. State Textile School, and has been with the Elliott Knitting Mills, Hickory, N. C., and in the oil laboratory of a large manufacturing chemist.

The company has recently been appointed textile distributors for the technical gelatins of the Eastman Gelatin Corp., and also represent the General Naval Stores Company on their complete line of pine oils. The Greensboro concern recently opened a sales office in New York City, at 415 W. 28th St., in charge of C. H. Harris, formerly identified with the Stewart Silk Co., Easton, Pa., the Gunning Silk Co., of Easton, and the Standard Silk Co., Oxford, N. J.

* * *

Hercules in Philadelphia

Hercules Powder Company, Inc., Wilmington, Del., have opened offices at 703 Fidelity-Philadelphia Bldg., Broad and Walnut Sts., Philadelphia, for the sale of Hercules wood rosin, steam-distilled wood turpentine, and steam-distilled pine oil. C. H. Boys, formerly head of the company's Chicago naval stores territory, is manager of the Philadelphia office.

* * *

Atlas Products at Fair

Upon invitation of the Ford Motor Company and Sears, Roebuck & Co., Fade-Ometers are in actual operation in these companies' buildings at the Century of Progress in Chicago. This is the device for foretelling color fastness, etc. Ford requires Fade-Ometer tests on all upholstery used in the standard and deluxe 1934 model cars, as insurance against fading. Sears, Roebuck uses it to place specific guarantees on the merchandise sold. The Launder-Ometer, for predetermining effects of commercial and domestic washing, such as fading, staining, shrinking, mechanical action, etc., is also in operation in the Sears building. These devices are manufactured by Atlas Electric Devices Co., 361 W. Superior St., Chicago.

* * *

New Booklet on "Buying"

A very interesting as well as instructive booklet treating on the art of Buying in its many phases has just been issued by the Steel Heddle Mfg. Co., Philadelphia, Pa., as a help to those buying any type of equipment and especially loom harness.

* * *

Norris Supply & Machine Co. Succeeds Norris Supply Co.

Norris Supply Co., Gastonia, N. C., has been re-organized and is now operating as Norris Supply & Machine Co. Barney F. Norris is general manager. This company has a new and complete stock of textile mill supplies.

* * *

See Natural Colors Under New Lighting

Good vision is in line for more years of enjoyment through the medium of new kind of lighting which is almost identical to daylight in color quality. A new light source, known as the high pressure mercury lamp, has been developed by engineers of the Westinghouse Lamp Company. Used in combination with standard tungsten filament lamps, several hundred of these lamps will supply the illumination in the main exhibit hall and other areas in the Ford Building at A Century of Progress this summer.

By itself, the high pressure mercury lamp emits a light distinctly bluish-white in color. Under this illumination, nature's colors are distorted slightly and do not appear in their true harmony. The reason for this is that some of the color rays which make up daylight illumination are missing in the mercury light. The combined light of tungsten filament and high pressure mercury lamps, however, is surprisingly close to that of daylight in color. The color deficiency of tungsten light is balanced by the presence of these very colors in mercury light.

Booklet on Squirrel Cage Induction Motors

Allis-Chalmers Mfg. Co., Milwaukee, Wis., have published a leaflet, No. 2173, covering their Type AR squirrel cage induction motors. These motors are made in ranges from 1-hp. to 75-hp., 1,800 r.p.m., 60 cycles; and 1-hp. to 50-hp., 1,500 r.p.m., 25 cycles. Views of the motor with flange mounting, vertical type, with drip proof cover, and pressed steel motor base, are shown.

* * *

Spiral-Record Cam-Operated Electrical Operation Recorder

Bristol Company, Waterbury, Conn., have introduced an electrical operation recorder which provides a long record on a fast-moving round chart. This instrument, instead of making one circular record, draws a spiral curve starting at the outer edge of the chart and gradually moving toward the center. This spiral record is accomplished by a telechron cam which continuously resets the record-making movement. The recorder, it is pointed out, is being widely used in time study work since it provides an open record with the easy filling and ready reference characteristics of a round chart.

* * *

Unique Valve Literature

An unusual piece of valve literature, a 12-inch cut-out replica of a Jenkins standard iron body gate valve, has been distributed by Jenkins Bros., 80 White St., New York City. This cut-out provides an exact reproduction of both the exterior and the mechanism of a big, heavy Jenkins valve. An accurate listing of the features of Jenkins design and construction also is given.

* * *

Link-Belt Has Instructive Exhibit at World's Fair

Noteworthy among the industrial exhibits at this year's Century of Progress Exposition is that of Link-Belt Company, Chicago, in the General Exhibits Building, where the company's mechanical materials handling machinery and positive power transmitting equipment are portrayed in beautiful colored illuminated glass pictures; in working models that hold the attention of young and old; in dioramas; and in actual machinery units, a number of which can be operated with ample opportunity to observe how each mechanism works.

The working models include a pivoted bucket conveyor for handling coal, ashes, etc.; a crawler dragline handling dirt; and a rotary railroad car dumper. Crawler cranes and excavating shovels, and a unique new positive variable speed transmission, are among the various additional equipment the company is displaying this year.

Standard-Coosa-Thatcher Co. Moves into Larger Quarters

With the return to Philadelphia on June 1 of R. J. Mathewson, vice-president in charge of sales of the Standard-Coosa-Thatcher Company of Chattanooga, Tenn., yarn and thread manufacturers, the sales department was moved into larger quarters, 804-6 LaFayette Bldg., in Philadelphia. Associated with Mr. Mathewson in the new offices are J. H. Verlenden, chairman of the board of the company; William H. Thatcher, director, G. H. Greene, head of the thread sales division; Earl Dillmore, Wm. H. Hall, and Robert Lewis. Richard C. Thatcher, recently elected president of the company and son of one of the founders, retains his office in Chattanooga.

* * *

Results of a Scientific Discussion of Warp Sizing

The outline report of the scientific discussion of the sizing of cotton and rayon warps, published in the June number of "Textile Research", reflects an almost unanimous opinion that, in the present state of the art, the simplest sizing materials will give the best results in weaving and finishing. It is admitted, however, that common practice in sizing both warps and finished goods is largely empirical, and that lack of exact scientific knowledge of sizing materials and their properties is a cause of needless expense for both weaver and finisher. Therefore, U. S. Institute for Textile Research, under whose auspices this conference was held, has recommended to the Textile Foundation as a worthwhile research project a study of the properties of sizing materials and films in relation to the properties of yarns and fabrics, and to the problem of desizing.

It was agreed by those taking part in the discussion that it was "trick things" in the sizing mixtures that gave the most trouble and were seldom of any value, particularly waxes, linseed oil, mineral oils used without an emulsifying oil, and dyes having an affinity for rayons. Particularly in the finishing of rayons such materials are difficult to identify and to remove by desizing, and are the cause of large losses in damaged goods. The need of an educational campaign to eliminate the needless use of such materials is emphasized, or willingness of gray goods manufacturers who use them to identify them when shipping the goods to finishing plants.

Another noteworthy feature of this discussion, particularly in view of the unstable viscosity of most starch mixtures, is the announcement of a representative of the du Ponts that his company is developing a synthetic size having a much more stable viscosity than the natural starches. It was agreed that if the cost of such a size was not too high it would be a great boon to the industry.

Other features of the June issue are the report of "The Taking Up of Water by Cellulose," a Textile Foundation study by Wilder D. Bancroft and J. B. Calkin, and the regular abstract section covering scientific textile research throughout the world.

* * *

Inventor Assigns Patent on Produce Bags to Public

Patent rights covering the manufacture of a duplex type of cotton bag for use in consumer packaging of farm products, invented by Robert J. Cheatham of the Bureau of Agricultural Economics, and originally assigned to the Secretary of Agriculture, have now been assigned to the public, the Bureau has announced.

The bag, the fabric of which is woven in one piece, has a close-mesh section on which brands, sellers' names, and other descriptive matter may be printed, and an open mesh section which permits visual inspection of the contents. More than 2,000,000 bags of this fabric, in sizes ranging from 4 to 25 pounds, have been manufactured since its introduction to the trade two years ago, and they are now being widely used in packaging oranges, potatoes, onions and walnuts. A greatly increased and more widespread use in the future is anticipated as a result of the disposition of the patent rights.

Development of the bag is only one of the results of the Bureau's studies of opportunities to increase the use of cotton. Assignment of the patent to the public permits anyone to manufacture the patented bag free of any restriction.

* * *

Study on Different Cotton in Yarns and Sheetings

The U. S. Department of Agriculture recently issued a bulletin, Technical Bulletin No. 406, dated March 1934, entitled "A Study of the Raw Cotton and the Yarn and Sheeting Manufactured from Three Grades of American Upland Cotton." This bulletin is divided into four sections, the three main sections being (1) manufacturing tests of the yarns and sheetings; (2) serviceability test of the fabrics; and (3) the effect of ironing on these fabrics.

All the manufacturing of yarns and fabrics discussed in this bulletin was done in 1929-30 at Clemson Textile School, under the direct supervision of H. H. Willis, dean of the textile school, who was at that time senior cotton technologist in charge of the cotton testing spinning activities of the Division of Cotton Marketing, Bureau of Agricultural Economics, U. S. Department of Agriculture, in co-operation with Clemson Agricultural College. A prior test on different grades and staples was conducted by H. H. Willis in co-operation with Clemson College, results of which were published in U. S. Department of Agriculture Bulletin 1488 entitled "Manufacturing Tests of Cotton of the White Grades of the Universal Standards for Cotton." Anyone interested in receiving a copy of the above should write to the Bureau of Agricultural Economics, Washington, D. C., giving the name and number of the bulletin. This bulletin should be of special interest to cotton manufacturers.

* * *

Selection of Cable

A new 80-page reference book on "How to Select Insulated Cable" has been published by the General Electric Company. Designated as GEA-1837, the publication covers cable for the transmission and distribution of electric power at normal frequencies, and presents in convenient form the information that is required in determining the cable best adapted for a particular installation.

The more usual applications of cable are covered. The subject of cable economics, not properly within the scope of this book, is touched on only lightly to insure that an economic decision will not be based on the price of the cable alone, to the exclusion of other important factors.

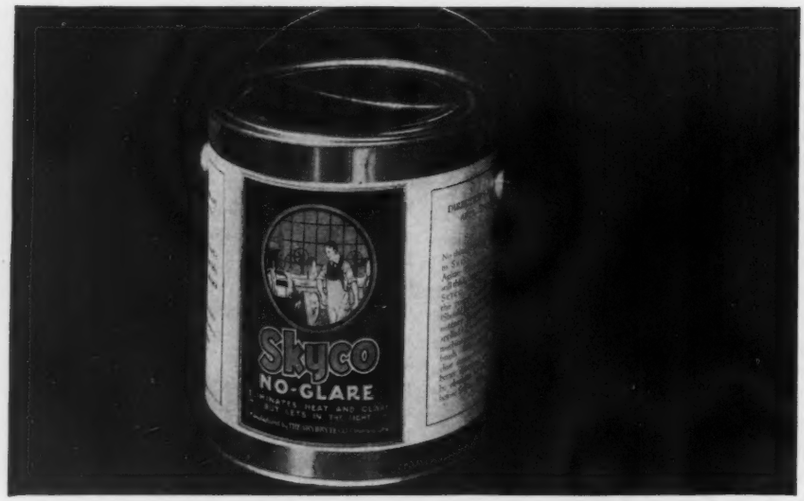
Two methods of selecting conductor size are given. The first, a comparatively simple one, covers cable for wiring houses, buildings, small industrial plants, and similar applications. The other method, more detailed, includes 27 tables of current-carrying capacities.

The various types of insulation and finish are described, and tables of thickness are given. Tables of wire gauges and dimensions, sizes of shipping reels, and a bibliography are also included.

* * *

Poster on Southern Textile Exposition

The management of Textile Hall Corporation, which will conduct the Southern Textile Exposition in Textile Hall, Greenville, S. C., October 15-20, have distributed 1,000 copies of a very attractive poster concerning the Exposition, among the textile plants of the southern states. The poster, attractively designed and printed, depicts industry in the foreground with a reproduction of the famous Textile Hall. Greater interest in the exposition is reported as the date approaches, and in extent and variety of exhibits, and attendance, it is expected to surpass its predecessors.



Buy Your Window Shades in Cans

at 1-2c Per Square Foot!

SOLVE the expensive problem of eliminating glare and heat from factory windows and skylights thru the use of SKYCO NO-GLARE, the sky-blue liquid which when painted over glass filters the fierce rays of the sun—shutting out *all* of the glare and a *lot* of the heat, yet it admits 94% of the light. The cost is only about ½c per square foot of glass covered.

For ten years No-Glare has served many of our largest industries, saving them hundreds of thousands of dollars in expensive window shades. No-Glare has never been successfully imitated. If you have tried substitutes and been disappointed — try the *genuine*. If it does not live up to our claims you may return it at our expense.

The action of No-Glare is simple. It filters out the infra-red sun rays—that part of sunlight which produces heat but not light —and allows 94% of the natural light to flow through with restful diffusion.

Like an Umbrella Over Your Plant

No-Glare is easy to apply either to the inside or outside of the glass and will stay on until removed with brush and warm water. Let this economical and effective product solve *your* problem. Use the coupon or write for a 1-gallon trial can on a money-back basis.

Try NO-GLARE at our Risk

Write or Use Coupon

The SKYBRYTE Co.,
1929 E. 19th St., Cleveland, Ohio.

Gentlemen:

Enclosed find trial order of 1-gallon of SKYCO NO-GLARE at $3.50. It is understood that if we are not satisfied we can ship it back collect and our money will be refunded.

Name of Company.....

Address.....

Textile Graduates of N. C. College Secure Positions

Monday night, June 11, at the closing exercises of the 1934 Commencement, 34 young men who had completed the prescribed work in the textile school were awarded diplomas by North Carolina State College, Raleigh, N. C. Dr. Thomas Nelson, dean of the textile school, stated that every member of this year's class has been placed in a textile position, and that the requests for men exceeded the number in the graduating class.

Wendell G. Faw of North Wilkesboro delivered an excellent oration on "The Cotton Textile Industry in the NRA Program."

C. S. Tatum, general manager of the Pilot Mills, Raleigh, presented to H. M. Foy, Jr., of Mount Airy, the medal which is awarded annually by the National Association of Cotton Manufacturers to the most proficient textile student in the graduating class.

Monday was Alumni Day and a number of men prominent in the textile industry were on the campus to greet old friends and classmates. At the alumni meeting Monday morning, Carl R. Harris, class of 1917, manufacturing engineer for the Erwin Mills Company of Durham, Cooleemee and Erwin, was elected a member of the executive committee of the General Alumni Association.

Recipients of degrees, their home addresses, and the places where they will work are listed below:

BACHELOR OF SCIENCE IN TEXTILE MANUFACTURING

W. A. Blackwood, Cooleemee; Mayo Mills, Mayodan, N. C.—B. W. Books, North Wilkesboro; Pomona Mills, Greensboro, N. C.—L. R. Burgess, Pleasant Garden; Burlington Mills, Burlington, N. C.—S. H. Caldwell, Concord; Goodyear Mills, Cedartown, Ga.—J. T. Cashion, Kannapolis; Cannon Mfg. Company, Concord, N. C.—J. F. Cline, Salisbury; China Grove Mills, China Grove, N. C.—H. M. Farris, Shelby; Fieldale Mills, Fieldale, Va.—H. M. Foy, Jr., Mount Airy; Burlington Mills, Burlington, N. C.—G. T. Gardner, Grifton; Cramerton Mills, Cramerton, N. C.—J. S. Hardin, Terrell, Texas; Consolidated Textile Corp., Lynchburg, Va.—B. R. Harris, Raleigh; Tennessee Eastman Corp., Kingsport, Tenn.—J. L. Judd, Varina; Varina Knitting Company, Varina, N. C.—J. H. Lewis, Winston-Salem; Chatham Mfg. Co., Winston-Salem, N. C.—W. L. Loy, Creedmoor; Burlington Mills, Burlington, N. C.—P. W. McCollum, Wentworth; Gibson Mills, Concord, N. C.—T. G. Matthews, Saluda, S. C.; Goodyear Mills, Rockmart, Ga.—E. May, Jr., Burlington; Armco Finishing Com-

pany, Burlington, N. C.—J. R. Meikle, Roanoke Rapids; Erlanger Mills, Lexington, N. C.—J. M. Middleton, Blakeley, Ga.; Goodyear Mills, Cedartown, Ga.—J. L. Padgett, Cliffside; Spencer Corporation, Spindale, N. C.—R. S. Pindell, Jr., Glenwood, Md.; The Erwin Mills, Cooleemee, N. C.—J. K. Pittman, Clarendon; Aiken Mills, Langley, S. C.—H. S. Plonk, Kings Mountain; Callaway Mills, Manchester, Ga.—J. A. Porter, Jr., Rockingham; Goodyear Mills, Rockmart, Ga.—M. A. Rhyne, Kings Mountain; Neisler Mills, Kings Mountain, N. C.—M. H. Rhyne, Mount Holly; Cramerton Mills, Cramerton, N. C.—T. L. Richie, Gastonia; Wiscasset Mills, Albemarle, N. C.—F. A. Thomas, Jr., High Point; Thomas Mills, High Point, N. C.—L. P. Wilkins, Haw River; Burlington Mills, Mooresville, N. C.

BACHELOR OF SCIENCE IN TEXTILE CHEMISTRY AND DYEING

H. S. Bliven, Rochester, N. Y.; Judson Mills, Greenville, S. C.—K. A. Bridges, Griffin, Ga.; L. G. Derrick, Newberry, S. C.; North Carolina Finishing Company, Salisbury, N. C.—W. G. Faw, North Wilkesboro; Tennessee Eastman Corporation, Kingsport, Tenn.—E. M. Williams, Raleigh; Waldensian Hosiery Mills, Valdese, N. C.

The Textile School of North Carolina State College has completed one of the most successful years since the establishment of the school. The following facts relative to the School will be of interest:

REGISTRATION

Students registered 1932-1933	143
Students registered 1933-1934	212
Increase this year over last	49%
Withdrawn for various causes	15
Students now in attendance	197

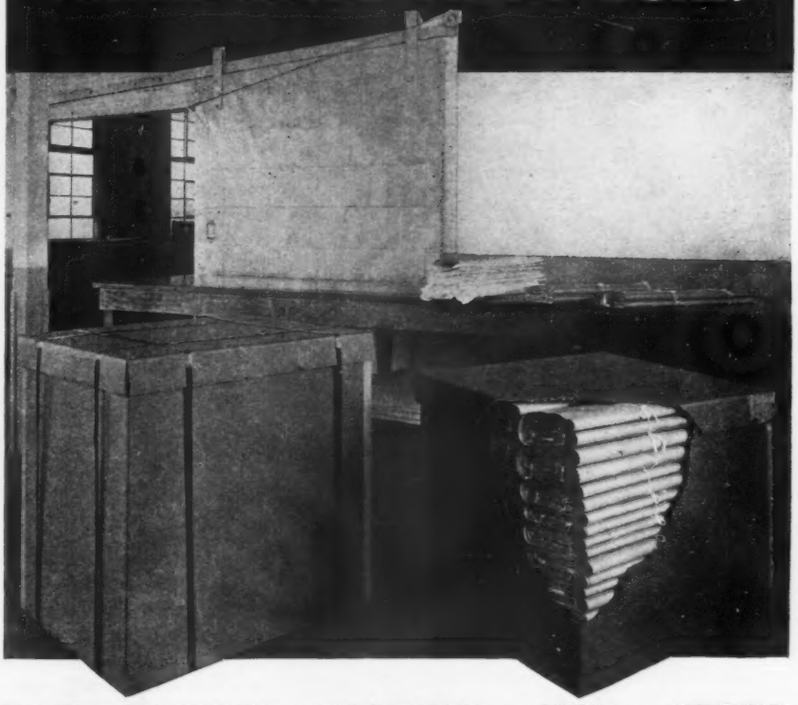
This is 11.3 per cent increase over any previous year since the textile school was established. Of the 197 students in attendance, 171 or 86.8 per cent are from North Carolina.

Textile alumni records 1901 to 1933, inclusive, show:

M.S. degrees awarded	11
B.S. degrees awarded (Graduates of regular 4-year courses)	400
American graduates with B.S. degrees	391
Percentage of total American graduates in the textile industry	72.15
Percentage of graduates located in North Carolina	64
Percentage of living American graduates in the textile industry	74.02
Deceased graduates	10

This is a remarkable record. Since the first textile degree was awarded in 1901, only 10 graduates has passed away, two of them being casualties of the World War.

CLEAN · SAFE PACKING IN CORRUGATED FIBRE BOXES



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Through any and all of the complex channels of present day distribution — from mill to factory, jobber, wholesaler or retailer — Hinde and Dauch corrugated fibre shipping boxes safely and economically transport hundreds of pounds of textile products daily. These strong, sturdy, inexpensive shipping boxes are easy to pack, easy to handle, easy to ship, easy to store. They keep merchandise clean and protect it 100% in transit. If you're interested in reducing shipping costs, send for a copy of our handy reference book, "Corrugated Boxes and How To Use Them." It is free! THE HINDE & DAUCH PAPER COMPANY, 454 Decatur St., Sandusky, Ohio.

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LIGHT WEIGHT » DURABLE » DUST-PROOF

H & D FACTORIES ARE AT YOUR SERVICE IN BOSTON, RICHMOND, BALTIMORE, PHILADELPHIA, NEW YORK, BUFFALO, CLEVELAND, SANDUSKY, SAINT LOUIS & KANSAS CITY. IN CANADA, TORONTO & MONTREAL

PERSONAL NOTES
about Men You Know

GEORGE C. GARDNER, of Atlanta, has been appointed district manager of The Louis Allis Co., Milwaukee, Wis., manufacturers of direct and alternating current motors. He is in charge of a direct factory branch office in the Bona Allen Building, Atlanta, Ga. The territory served from this office includes the states of North and South Carolina, Georgia, Florida, Alabama, Tennessee and Mississippi, and local sales offices in Birmingham, Charlotte, Greenville, and 19 service stations in the states named are under Mr. Gardner's supervision. The company manufactures a complete line of industrial type electric motors from ½ to 250-hp., including loom motors and specially constructed "self-cleaning" motors for the textile industry. Mr. Gardner, who has been identified with the electric motor industry for a number of years, is well known throughout the southern territory.

Mr. Gardner

H. B. BERGFELD has been promoted to superintendent of the Bemis Bro. Bag Company cotton mill at Talladega, Ala., succeeding D. L. WALL, who recently resigned. Mr. Bergfeld has been assistant superintendent for the past several years.

NELSON N. HARTE has become overseer of carding at the Merrimack Mfg. Co., Huntsville, Ala., succeeding GEORGE W. LEHMAN. Mr. Harte, a graduate of Wake Forest College and the N. C. State Textile School, has been overseer of carding and spinning at the Martinsville (Va.) Cotton Mills.

GEORGE REPASS, formerly at the Brookside Mills, Knoxville, Tenn., has succeeded WILLIAM R. BARNETTE as agent of the Walcott & Campbell Spinning Mill, Gulfport, Miss.

A. L. HOWLAND, formerly at Jefferson Mill No. 1, Jefferson, Ga., is now superintendent of the Jefferson Mill No. 2, Crawford, Ga.

J. W. MCELHANNON has become general superintendent of the Eagle & Phenix Mills, Columbus, Ga., succeeding W. R. TATTERSALL, resigned. Mr. McElhannon has recently been superintendent of the mill of Selma Mfg. Co., Birmingham, Ala.

FRANK ILER, who was graduated with high honors at the textile school, Clemson College, S. C., last week, with a B.S. degree in textile chemistry, has been commissioned a second lieutenant in the officers' reserve corp and is attached to the 327th infantry. He is a son of H. H. ILER, mechanical superintendent, Union Bleachery, Greenville, S. C., president of the Southern Textile Association.

DAVID C. JONES, some years ago superintendent of the Judson Mills, Greenville, S. C., has become superintendent of Oconee Textiles, Inc., Westminster, S. C., succeeding W. D. JENKINS, resigned.

GEORGE D. FRYFOGLE has been promoted to general superintendent of the Brandon Corp. mills, succeeding the late W. F. DAVIS. For several years Mr. Fryfogle has been superintendent of the company's duck mill, and will continue his duties there as well as his enlarged responsibilities.

T. L. ARNETT, formerly superintendent of the Oakleaf plant, Callaway Mills, LaGrange, Ga., has been made technical assistant to PERRIN N. COLLIER, who is assistant to FULLER E. CALLAWAY, treasurer, in connection with manufacturing in all of the company's LaGrange plants.

R. M. BURSCH has been made vice-president of Robert Gair Company, Inc., 155 East 44th St., New York City, in charge of production and sales in all operating divisions of the company in the United States, including subsidiaries engaged in the manufacture of boxboards, folding cartons and shipping containers.

O. H. AICHELMAN has become superintendent of Charles Mills Co., Red Springs, N. C., succeeding J. W. HUNT, resigned. Mr. Aichelman was formerly connected with the Dunean Mills, Greenville, S. C.

J. WILSON MCARVER has become general superintendent of the Hawthorne and Hampshire Spinning Mills, Clover, S. C. He was formerly superintendent of the Monroe (N. C.) Mills Co., where W. Y. BALL, of Stony Point, N. C., succeeds him.

W. G. HARDY, formerly superintendent of the High Shoals (N. C.) plant of Manville-Jenckes Corp., has succeeded PRESTON NEWELL as superintendent of the Aponaug Mfg. Co., Kosciusko, Miss.

T. B. KERSEY, formerly assistant superintendent of the Unity Spinning Mill plant of Callaway Mills, LaGrange, Ga., is now superintendent.

ERNEST L. HOLT has been promoted to general overseer of carding at the Santee Mills, Orangeburg, S. C., succeeding W. A. MCABEE, resigned.

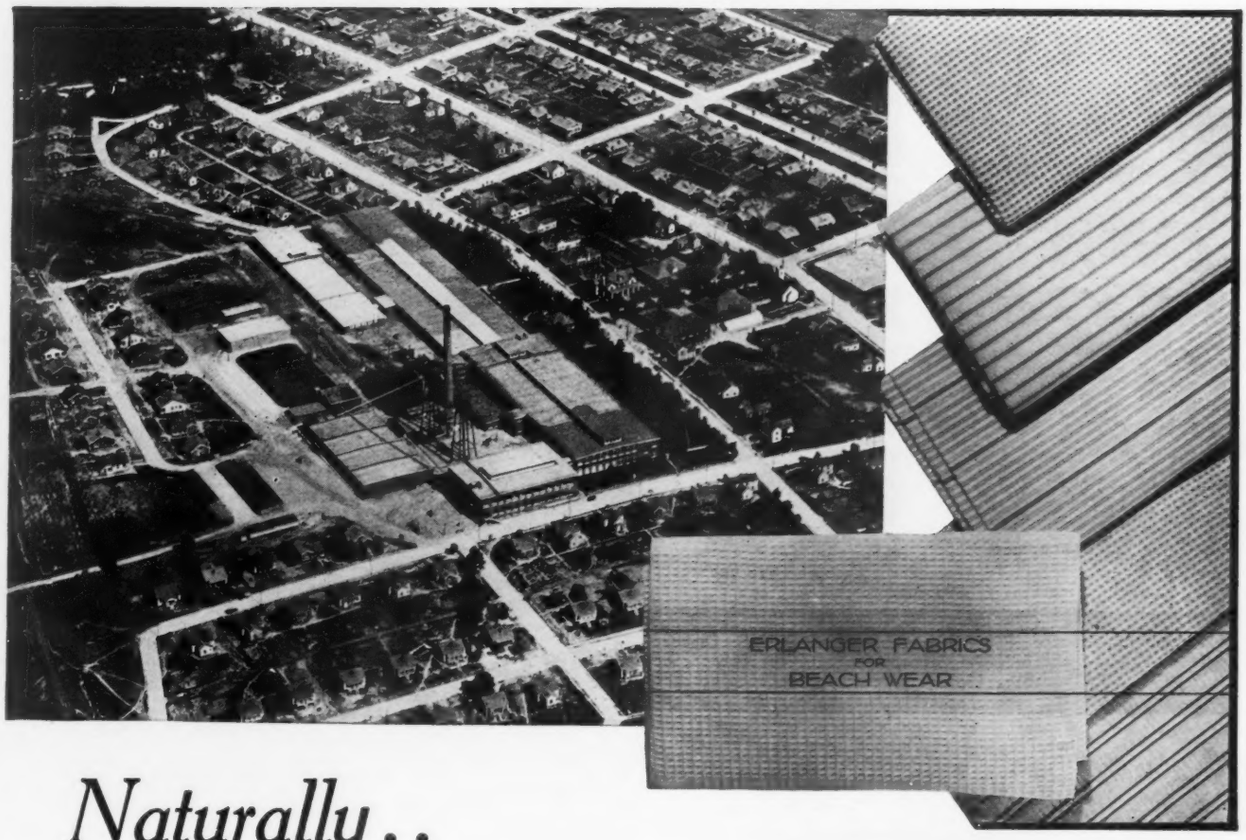
Obituary

AUG. W. SMITH, SR., one of the really great figures in southern cotton manufacturing, passed away at his home in Greenville, S. C., on Tuesday, June 12, at 72 years of age. His death followed a lingering illness. Mr. Smith was president and treasurer of the Brandon Corp., with plants in Greenville, Woodruff, and Travelers' Rest, S. C., at the time of his death. He organized the Woodruff Cotton Mill (later a Brandon plant) in 1900. He is survived by MRS. SMITH, two daughters, MRS. LUTHER M. MCBEE, Greenville, S. C., and Dr. MARY NOBLE SMITH, Philadelphia; and two sons, AUGUSTUS W. SMITH, JR., of Greenville, and L. PERRIN SMITH, of Spartanburg.

WILL D. BRIGGS, receiver of the Caraleigh Mills Co., Raleigh, N. C., of which he had been president, passed away at his Raleigh home on May 22, following a heart attack. He was 52 years of age, and had been connected with the Caraleigh Mills Co., since his graduation from N. C. State College. He is survived by MRS. BRIGGS, three daughters, one brother and one sister.

W. F. DAVIS, for many years general superintendent of the mills of Brandon Corp., Greenville, S. C., died suddenly in Greenville on May 18 following a heart attack. Mr. Davis was 55 years of age, and had spent his lifetime in the cotton manufacturing industry.

JOHN NASH MCCULLAUGH, 43, for about ten years managing director of the National Association of Hosiery and Underwear Manufacturers, and one of the most forceful figures in that industry, was found dead on June 7th in the garage of his home at Wilson's Point, Conn. After leaving the association in 1931, Mr. McCullaugh became secretary and general manager of the Berkshire Knitting Mills, Reading, Pa., resigning there in 1932, when, following a world trip, he retired from active business.



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insures fabric excellence in the

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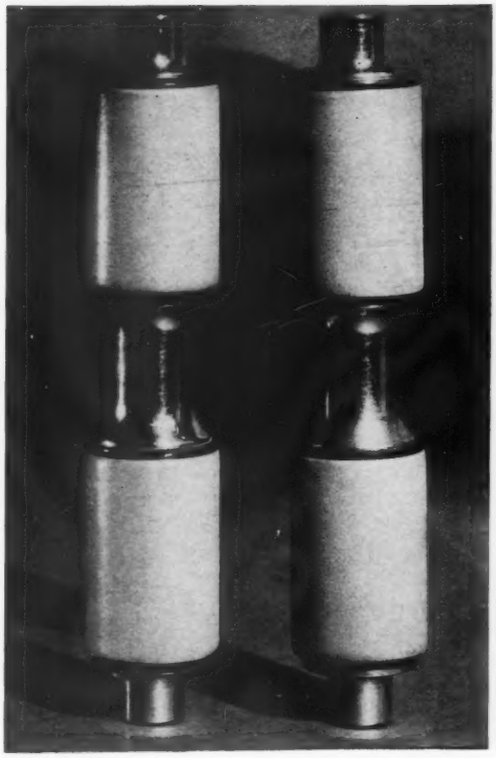

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From the first twist in Rayon plants to the final twist before weaving and knitting, Atwood Machines produce the bulk of Rayon and other synthetic fibre yarns.

WHY ?

— Because Atwood machines produce quality work at low cost, handling the heaviest or the most delicate of the new synthetic materials.

— Because the development of Atwood machines has kept step with the developments of these new fibres.

— Because the new Atwood machines are oilless — eliminating oil stains, the biggest bugbear in Rayon production.

If you are interested in Rayon Twisting, investigate Atwood Rayon Twisters. Drop us a line.

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THE ATWOOD MACHINE COMPANY, STONINGTON, CONN., U. S. A.

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AN OLD TIMER SAYS
In working with zest and giving his best,
Just for the pleasure of giving,
In the hope of helping his brother along,
"Old-Timer" finds the sunshine of living.

A Letter about Sizing and Slashers

DEAR YOUNG-TIMER:

Following our discussion on sizing and in order to answer your many questions about sizing ingredients and their effects on the yarn and resultant cloth, I am writing you tonight a rather lengthy letter, which by no means covers the subject completely; but in the hope it may lead you into a study of the subject which I am sure you will not only find most interesting but very valuable to you in your efforts to obtain maximum efficiency from your weaving department.

In comparison with dyeing, bleaching and finishing, there has been very little scientific research in regard to sizing warps or yarns for weaving purposes.

The Purposes of Sizing

The fundamental purposes of sizing are:

First, to give the yarn the necessary strength and elasticity to enable it to give maximum weaving results.

Second, to give the yarn compactness and smoothness and to lay or bind projecting fibers in order to reduce frictional resistance during the mechanical operation of weaving.

In the process of weaving the yarn has to withstand both internal and surface strains. The tension of the warp is the cause of the internal strain; while the friction of the harnesses, reeds and shuttle may represent the surface strains or frictions.

If the threads could all be laid side by side on the loom beam, that is the diameter of one thread divided into the distance between beam heads would give the exact number of ends required to lay each end side by side and fill the space between beam heads exactly—this would prevent crowding or piling one upon another of the threads.

This, however, is not practical but it does point out the importance of laying a good lease at the slasher so the ends going onto the loom beam will be as even as possible. Theoretically, a slanting tooth comb at the front of the slasher is the best arrangement for preventing the warp ends from changing their relative positions while being wound on the loom beam. I would like to explain this fully to you sometime.

To obtain the two main objects mentioned, in the sizing of warps, you have three separate and distinct ingredients or combinations of ingredients to work with. Each has a different effect on the yarn and these effects may be determined best probably by using one product at a time on the yarn and noting results. This, however, is for the laboratory worker rather than the practical man.

First: Strengthening agents are starches, gums and glues.

Second: Softening agents are fats, oils, soaps, etc.

Third: Hydroscopic agents are glycerine, magnesium and calcium chlorides and some salts, etc.

In addition to these, most size manufacturers use a preservative of some kind to retard the development of mildew and there are many products which may be used as such a preservative. Some of which are zinc chloride, salicylic acid, etc.

The weighting materials such as French chalk, China clay, Epsom salts, etc., we will not discuss because they are not used on goods such as you are making.

The strengthening, softening and hydroscopic agents mentioned have varying effects on the strength, elasticity and feel of the yarn and finished cloth, and a scientific as well as practical knowledge of the influence these products produce should be studied in each plant to fit them best to the local conditions.

For example, in a weave room of high humidity you could not use as much of the hydroscopic agent to obtain maximum weaving results as you would need in a weave room of less humidity.

The object aimed at should also be considered. That is: are you striving for maximum weaving efficiency alone or are you trying to size your warps to obtain the maximum dollars for your firm consistent with the manufacturing of a piece of goods which will appeal to the customer most, not only in the gray goods but in the finished product after it has been bleached? Many times the finisher will prefer goods from a

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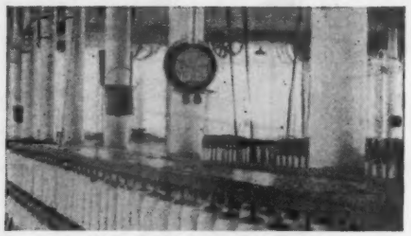
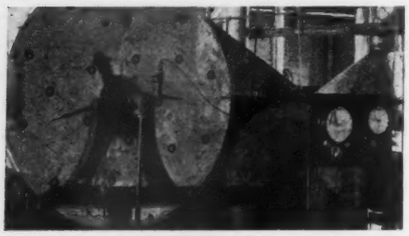
To reduce spoilage and eliminate waste you need not make an expensive investment. This entirely new, inexpensive controller will give you positive air-operated control. Because of its high accuracy and positive control action, there are scores of places in every textile mill where it will quickly pay for itself. Ask for a complete description of the 1119 Controller—or better, have one of our engineers tell you of the great variety of instruments that are saving money every day in the textile mills. Write today.



SPINNING

Positive humidity control in spinning rooms and weave sheds is made simple with Foxboro Humidity Recorder-Controllers. They read directly in per cent humidity.

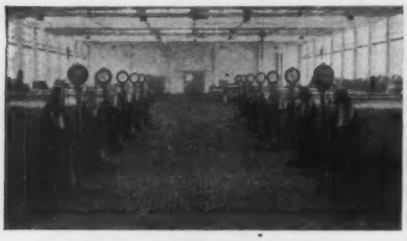
Write for D. M. F. 595-1.



SLASHING

Engineered Control of slashing pays big dividends. Not only are large savings made in the slashing operation, but definite reduction in warp breakage on the loom results.

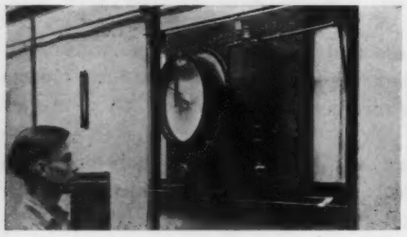
Write for D. M. F. 612.



DYEING

Elapsed Time-Temperature Controllers with automatic signal lights to tell the operator when to recharge machines, save their cost quickly. For every type of dyeing, Foxboro has the correct instrument.

Write for D. M. F. 584.



DRYING

Temperature control of dryers, carbonizers, etc., allows maximum production with perfect safety to goods. With automatic control the operator is freed from constant attention to steam valves.

Write for Bulletin 177.

SERVICE

Steam and Water Flow Meters for Interdepartmental metering and various power plant instruments increase efficiency of plant operation and cut waste to the bone.

Write for Bulletin 113.

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THE COMPASS OF INDUSTRY

• • COMPLETE TEXTILE MILL INSTRUMENTATION • •

certain mill because he finds that the goods design and finish well and it is almost impossible for the officials to find any reason for this because we really know so little about the effects the sizing materials have on our yarns, neither do we oftentimes know what materials we are using for sizing.

As you probably know, glycerine and tallow are the same product. That is—glycerine is taken from tallow, but strange to say they have opposite effects on yarns. Tallow or grease is a repellent of moisture while glycerine will attract moisture. You can readily see if a mill has settled down on a size in which or with which they are using common beef tallow purchased from a firm which is making tallow for the market and then the buyer purchases a lot of tallow from a firm which takes the glycerine or most of it out of the tallow before they sell it, then the mill will not likely get the same results from their sizing as they have been getting. Numerous other illustrations could be made to show that there are all kinds of pitfalls glaring at you in the problem of sizing.

Of course, laboratory controls and methods are much better than formerly, but the results obtained are not always the same as found in practice.

I am now going to give you some information in paragraphs which do not necessarily carry a continuous thought—I am merely jotting them down as they come to me from experiences and information obtained in various ways. You must then analyze and study them as best you can because if I should attempt to explain each one I certainly could not finish this letter tonight or in several nights.

Best results are obtained in weaving if the size has penetrated into the thread, binding the individual fibers and causing them to lie down or adhere to its surface.

Pure starch gives to the thread breaking strength almost in proportion to the amount added; but go beyond a certain point in adding starch and you lose elasticity. It is up to the individual plant to find that point.

No warp would run well without elasticity, that is, on weaves where the filling is beat up.

Soluble starches give better results as to elasticity. And although starch manufacturers claim that you can boil or cook soluble starches for long periods without it breaking down, the fact remains that if you do cook them too long the sized warps will not only shed badly in the loom but those warps will not stand as much humidity as will other warps in the room, which have been sized with starch not cooked too long.

The result is soft warps scattered over the room with a decided loss in production and cloth which will run several points lighter than the average from other looms in the room.

This is one of the places where controlled cooking and controlled steam on the cylinders are so valuable.

Believe it or not:

Pure glue size will not give as much strength to yarn as starch size.

Pure gum size will not give as much strength to yarn as starch but does resist the chafing more. It also gives less elasticity than starch.

Softness tends to decrease breaking strength but increasing the chafing resistance. That is, starch sized with fats added will not show as much chafing in weave room.

Hydroscopic materials increase breaking strength. Cotton is hydroscopic, therefore, any substance which will cause it to maintain normal moisture content or take on additional moisture up to certain amounts, will increase its breaking strength. Glycerine and other hydroscopic agents will increase the elasticity of a cotton thread more than any one thing you can add to it. Take a warp bobbin of say 30s yarn and after marking off a place on a table (or any convenient place) about 36 inches; hold the thread at these two marks, then stretch until it breaks. Repeat several times until you determine the elasticity in inches, approximately. Now immerse the bobbin in a pail of water for five or ten seconds and repeat your elasticity test. You will be surprised.

The less viscous a solution the more of it will be taken up. It will penetrate better.

But the less viscous a solution, the less amount of dry material which will remain in the yarn.

As the amount of dry starch in the yarn goes up so does the breaking strength of the yarn and your weaving has less ends broken per loom hour.

From the above two paragraphs it would look like a 20 fluidity starch would be better for weaving than a 40 fluidity. But is it?

Only by actual and careful tests will you know which is best for your conditions.

Also, the more starch you can add to the outside of the thread, the more strength you will get, but you must know where to stop before you get too much chafing. I am speaking of starch alone now. When you add fats to the batch you of course can go higher with adding starch without chafing.

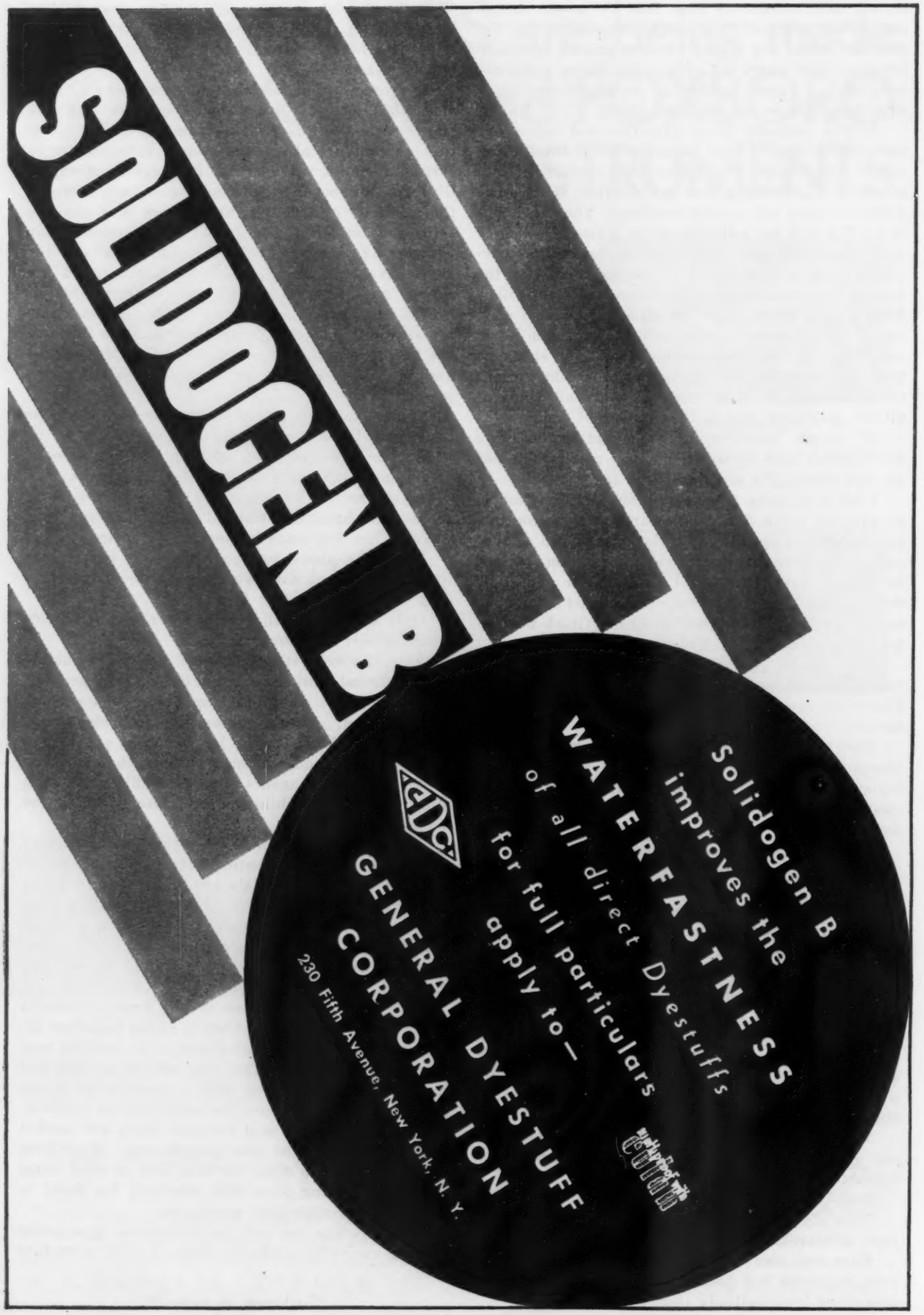
You see, these agents seem to conflict with each other, but their combined effect is needed to get the maximum results.

Now if you are somewhat confused after reading what may sound like contradictory statements, let me repeat that starch, fats and a hydroscopic agent (glycerine is considered the purest and best) are the three necessary sizing ingredients to give strength and elasticity to yarn. Preservatives, while sometimes necessary, do not add anything to weaving qualities of the yarn.

Therefore, your problem or any superintendent's or weaving overseer's problem in sizing is to first determine the consistency of starch to be used for best results at your plant, then the amount of fats and hydroscopic agents along with a preservative if you find you need it. Be sure the water you use for cooking has no alkali or acid reaction which will conflict with your starch or size ingredients. Hard lime water is found in many sections and in such cases a small softening plant will soon pay for itself in the saving of materials, steam, etc.

These things can only be determined by a series of long carefully conducted tests at each individual plant.

(Continued on page 79.)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HOW OTHER MEN MANAGE

Practical Discussions by Cotton's Readers On all varieties of Mill Subjects

Points on Loom Fixing (Part 2), by Ivar Moberg

(This is the second installment of a series of articles for COTTON *on loom fixing by a practical mill man. The first installment, which discussed mis-picks, appeared on page 89 of the June issue of* COTTON . . . *We are pleased to be able to present this practical discussion of the causes of defects in cotton weaving and their remedies, and thus to provide practical, usable information in connection with fixing looms. Subsequent installments will cover other problems of loom fixing.*—THE EDITOR.)

WE invite our readers to make use of this department for the discussion of any and all problems arising in the mill or finishing plant. Questions, answers or letters need not conform to any particular style and will be properly edited before publishing. The editors do not hold themselves responsible for any statement of opinion or fact which may appear in this department unless so endorsed. This department is open to all.

◆ ◆

Broken Picks

This defect, although resembling mis-picks, may easily be distinguished from the latter by the broken or cut ends of the filling. As was described under mis-picks, we first examine the first few picks left by the weaver before he reached the defect in picking, and note where the ends of the broken or cut filling lie in the cloth. If the broken pick is followed by a full pick which is cut closely, but outside the selvage on the battery side, it would indicate that the filling had run out just before the replenishing.

Before we attempt to fix the loom, we look in the bobbin can to see if there is an empty bobbin. If so, we examine this bobbin to see if it is rough, which would prevent the feeler sliding in time to register replenishing of the bobbin before the filling runs out. We assume that we are using the sliding feeler, which is almost universally used on looms today.

If the bobbin appears to be all right, we pick up a handful of bobbins from the can to see if the bunches are properly built. Then, after we have made sure that the filling is wound on faultless bobbins, we turn our attention to the loom.

We now place an empty bobbin in the shuttle and turn the loom over by hand until it reaches front center, where we note if the feeler enters in the center of the slot in the shuttle, and whether it strikes the bobbin squarely on the center. If the feeler strikes the bobbin above or below the center, it has a tendency to bind in the feeler case and thus will not slide on the bobbin. We also note whether the feeler slides freely and quickly on the bobbin when it comes in contact with it. We now see to it that the filling motion cam is properly timed so that the hammer will strike the filling motion slide at the same time that the lay reaches front center. If necessary, we also adjust the height of the trip lever on the slide in relation to the hammer, so that the latter will over-ride the trip lever with a clearance of about ⅛-inch before the feeler starts sliding.

After picking out the few remaining picks to the defect, we place one of the largest bobbins from the can in the shuttle and, holding the feeler back for a few picks, we start the loom and observe if the shuttle boxes properly. If it does, we release the feeler when the shuttle has just left the box and the feeler should register replenishing the next time the shuttle enters the box. It is obvious that the shuttle cannot be allowed to rebound or to be over-retarded in the box. Both of these faults will result from the feeler striking the bunch on the bobbin instead of above it, and the filling will run out before replenishing. When we have tried four or five pieces from the can without a miss from the feeler, we call the loom O. K.

However, if when we examine the defect we find that the broken or cut ends from the filling lie in the cloth inside the selvages it would indicate that the filling has been cut or broken either by a weak place in the filling, poorly wound filling, an injured bobbin tip, crooked rings or by some fault of the loom. If we find several broken or cut picks in the cloth we are reasonably sure that the defects are caused by faults of the loom and without further hesitation we set out to discover the fault.

We first examine the shuttle to see if the heel spring is tight and is holding the bobbin straight; if the eye is tight and clean, if the eye securely locks the filling and if the shuttle is smooth. If we find the shuttle to be O. K. we find, from the length of the broken or cut pick, on what side of the loom the filling has been broken or cut. There are several causes of broken or cut filling, such as: filling fork striking the grate, temple or temple cutter striking the reed, temple cutter too far advanced, filling catching on a worn picker, shuttle slapping the box front, shuttle striking the upper part of the box back due to too early closing of the shed or lack of proper

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power on the picking motion, shuttle too sluggish in entering the box, shuttle rebounding or being over-retarded. It is important that the shuttle is properly boxed and boxed in time, for otherwise it will have a tendency to push the shuttle feeler back, preventing filling replenishing after the filling has been cut by the shuttle feeler cutter. The filling can also be cut by the reed if the selvage is extremely tight and heavy.

Double Picks

This defect is distinguished by having two full picks in the same shed. This rarely happens, and when it does it is generally caused by the weaver who has been careless in finding the pick. The loom is so infrequently the cause of this defect that we can pass over it. When the loom does cause it, it is generally a result of some of the faults which we have discussed under the head of broken picks.

Filling Kinks

This defect is caused by the filling snarling or kinking under too much twist or by the twist not being properly set. Sometimes the filling, before being beaten up by the reed, lies in waves in the shed and the extra length of the filling pops up between the warp threads as it is beaten up by the reed. In this case, the loom is nearly always at fault and we can determine this by looking at the filling as it lies in the shed when the loom is running. Unless the sley is very heavy, we can easily detect the position of the filling in the shed by placing ourselves at the side of the loom and getting our eyes synchronized with the speed of the loom. If the filling lies in waves now and then the loom has a tendency to cause the defect of kinky filling. In this case we first look at the friction in the shuttle to see if this is O. K., and if so, then, contrary to all practice, we commence to fix the loom before we look for the real fault. The reason for this is that the most important thing for good weaving is a gentle pick. Hence we take off all the power of the pick we can, kinks or no kinks. Then we see to it that the shuttle is gently retarded in the box and that it does not rebound. We adjust the check and shuttle box to obtain a gentle retardation.

Having made the necessary adjustments, we start the loom, and bending our knees until the eyes are in level with the race-board, we again synchronize our eyes with the speed of the loom and note whether the filling remains tight without dropping down on the race-board or flipping up, when the shuttle comes to rest in the box.

On the side where the filling fork is located it is necessary to hold the fork up while we observe the filling. If the filling remains tight when the shuttle comes to rest in the box we can be assured that the loom is properly fixed. Sometimes, with hard twisted or springy filling, it is necessary to time the harness motion early so the shed will close over the filling before the shuttle comes to rest in the box. It is of course very important that the filling be properly conditioned.

Kinky Warp

Kinky warp occurs generally in heavy sley fabrics, such as poplin and light duck. Also in fabrics with hard twisted warp, this defect is often present. The defects can also be caused by using too fine a reed or by an improperly made warp. Spooler and warper kinks are often the cause of this defect. To eliminate this it is necessary to maintain a tension on the warp threads at all times. It may also be necessary to use a coarser reed with more ends per dent if this is practical. Staggered cams will often have to be resorted to on heavy sley fabrics. Timing the shed early will also help to eliminate this trouble.

(The third installment of this practical series on loom fixing will appear in an early number. If you wish to secure a clipping of the preceding installment which appeared in the June number, let us know. The subsequent installments will discuss creepers, pull-ins, skips, reediness, shuttle marks, uneven weaving, thick and thin places, temple marks, buttonhole selvages, loopy selvages, etc.—The Editor.)

Disagree About Card Grinding

EDITOR COTTON:

On page 75 of the November issue of COTTON there was an article by "CONTRIBUTOR No. 6275" entitled "Some Card Room Topics", in which he attempted to prescribe a remedy for the cause of high and low flats on cards which had run 10 to 15 years. He was recalling an old question that had previously been asked by some other contributor.

In his third paragraph "CONTRIBUTOR No. 6275" gives one the impression that his or some other fellow's cards do not receive much lubrication when he states, "As a cylinder bearing is worn, when starting the card up, you bear down on the cylinder belt, which will pick the cylinder up and come against the top flat and oftentimes in different places, there will be a dull cylinder and flat."

I must admit that the result of a worn cylinder bearing would cause all that our friend reveals and more. He must remember that the cylinder bearing is the most important point upon which all card settings depend, but the point that I am driving at is the neglect of the cylinder bearing. Surely any carder will always insist upon constant lubrication of the bearings as well as, at least, all fast revolving cards. Of course I take it for granted that our friend is only dealing with an isolated case, very few of which, if any, exist today. Grinders, above all, should be made to understand the value of proper lubrication and regular periods and especially on the cylinder and licker-in bearings. Grease in the top section of the bearing is not sufficient, but a daily oiling will insure safety and freedom from worn bearings.

However, in the next paragraph, this contributor states the causes of high and low flats, but in his statement he seems to have gotten things mixed up somewhat. For instance, he claims that, "As to high and low flats a stripper belt so loose that from time to time it comes off while the card is grinding will cause the flats to stop grinding."

How? I wonder. I should say that this defect

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of the loose belt, which, by the way, ought to be easily adjustable, would simply stop the journey of the flats around the sliding surface or bend. Here I think our friend had in mind the possibility that the belt slips off just as a flat slips under the solid roll, or drum roll as he chooses to call it. In that case of course the said flat would receive a prolonged grinding for that period, until, of course, the belt was discovered—probably on the floor.

But he goes on to say that also "A slack grinding rope will cause this by not pulling the drum at a regular rate of speed and often stopping on the flat." Please take particular notice of this last statement as the cause of high and low flats, because as I see the condition—why, there would not be any grinding done at all.

I trust "CONTRIBUTOR NO. 6275" understands that the speed of the grinding rolls is of paramount importance in the work of true grinding and if with a tight band or belt with a slow speed we cannot attain true grinding efficiency, why do we require a fast rotary speed? Because the emery fillet will be enabled to have enough power to grind the points clean, at the same time striking away the small fibers of metal which when using a slow revolving grinder would be left hanging onto the points of the wire. By the way, all grinding rolls should not revolve at less than 550 r.p.m. and they can be run at 750 r.p.m., that is, for 7-inch diameter rolls.

However, the foregoing is just to show our friend that the slack rope idea will not prove very detrimental to the flats, that is, in the cause of their becoming high or low, because, as stated, grinding as a matter of fact does not truly exist under such conditions.

Then this contributor gives a remedy for curing high and low flats. Absurd, to say the least. Still I will put it down to perhaps, our friend's lack of experience and hope that he will benefit by what little information I am endeavoring to give.

Here is where our friend exposes his lack of experience; in his fifth paragraph he says that "The way to overcome this trouble (high and low flats) is to put the drum on the flat that is low and set the low flat and then put on an extra tight belt or rope, or a tight stripper belt, and when the high flat comes under the drum a few times they will all be equalized and the card can be set O. K."

How simple! But what an imagination, and how easy it must be to determine that solitary low flat! Is there only one low flat to pick on? We cannot get away with high and low flats so easily as all that, and for his benefit I would advise check on his imagination on these important details. However, let that go. But this may be an eye opener to him and others, namely, the fact that the correct grinding of flats cannot be accomplished while they are in a position opposite to the carding position. What I mean to infer is that when grinding is done on the card—flat grinding, mind you—the flats are ground with the wire upwards. Carding is done with the wire downward. Do you see the point, that is, the deflection of the flat cannot be rectified in grinding on the card; worse, it is doubled.

True, innumerable grinding motions have been and are being applied to cards in order to secure correct adjustments for the grinding of individual flats on cards, but true grinding is never attained, and this brings to my mind a point which perhaps our friend forgot to state in his letter. Does he not realize that defective grinding motions and worn chains cause more high and low flats than anything else? He may have, however, perfectly good chains, but if each flat is not picked up by the stripper or any other mechanism at the correct point from grinding under a fast moving grinder, the result will be a high flat. So you see, the low flats are those which receive the abrasion and the high flats are those which never touch the emery. Slack or worn chains will of course be classed as another cause in the "hit-and-miss" procedure.

Now referring back to my statement that we cannot grind flats correctly while they are revolving around the bend, I must say that the only true way is by the use of an automatic flat grinder. In this machine, flats are ground in the carding position, and any high flat can be ground down to the correct height in a few minutes. Try to do this on any make of card and it would take weeks and very poor results would come at that, and I ask, what guarantee would there be that all of the 110 or 108 flats were the same? Absolutely none.

Flats are precision organs of the card, and must be treated as such if correct and proper carding capacity is desired.

It might be said that high and low flats will decrease carding capacity by one-third or more, but we cannot cure that defect by the simple application of a tight belt or rope.

For our friend's benefit I may inform him that there is also another cause of high and low flats, that being the fact that all flats are not covered with a wire of equal temper, some wire is harder, and it is possible to obtain a set of flats with some covered with highly tempered wire. Hence, this hard wire will refuse grinding more than the softer one, therefore, high flats appear in time.

E. D. (R. I.)

EDITOR COTTON:

In the November issue of COTTON, on page 75, "CONTRIBUTOR NO. 6275" brought up a question pertaining to high and low flats on cards which have been ground from 10 to 15 years and asking why they can't be set to the same gauge and alike. He gives some good reasons of what causes high and low flats, but I think he made a bad break when he said in the fourth paragraph of his article that a loose stripper belt, so loose that from time to time it comes off while the card is grinding, will cause the flats to stop grinding, while the drum is grinding just the same. "A slack grinding rope will cause this by not pulling the drum at a regular rate of speed, and often stopping on the high flats," he says. He continues: "So long as we have a slack rope or stripping belt we will have high and low flats. The way to overcome this trouble is to put the drum on the flat that is low and set to the low flat, and then put

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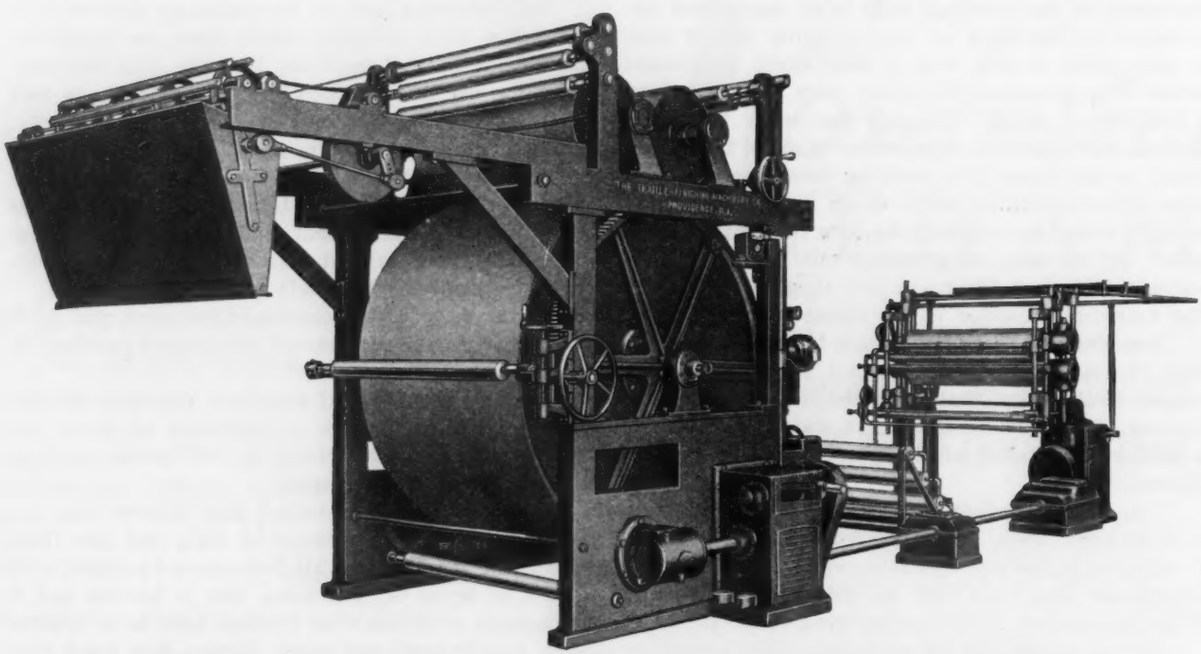

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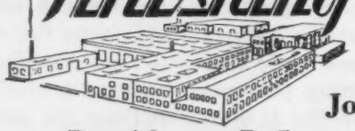

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on an extra tight rope or a tight stripper belt, and when the high flat comes under the drum a few times they will all be equalized and the card can be set O. K." He says let the card grind from 10 to 20 hours and this will do away with the high flat.

I think he has quite a harsh method of grinding down the high flats. I do not think it is wise to use extra tight ropes on any part of the card, especially on a drum grinder. They are dangerous.

Now, with reference to setting the roll to the low flat, I think the only way to grind down the high flats—provided that there isn't any flat grinding machine in the mill—is to set the drum grinder to a high flat, and set it so that it will grind the correct way and will not chop off the wire instead of grinding it off. A lot depends on how many points high the flats are before it can be determined as to how long the roll should be left on the card to grind.

Too much grinding has a tendency to hook the wire. Once this is done, it takes considerable time to get the wire back into shape again.

In the last paragraph of his article, "CONTRIBUTOR No. 6275" goes on to say that the grinding of a card depends on the ounces in the lap, the cleanliness of the stock, etc.; that if the stock is very dirty, then more grinding is needed, and also if the fillet is loose more grinding will be needed. This is not so in lots of cases. I have seen times when cards that were producing twice the amount of work that others were doing, and the wire has been in much better shape.

In regard to the fillet being loose, and needing more grinding than a cylinder that is tight, I do not see what good grinding is going to do a fillet that is so loose that it needs more grinding than one which is tight. About the only thing to do with a loose fillet is to re-draw it, and eliminate all the extra grinding, also there is the danger of the cylinder coming so loose and coming in contact with the doffer, which might end up in having to buy a new cylinder and doffer, not mentioning other damage this might cause. T. A. B. (MASS.)

What are the Figured and Actual Drafts?

"Wash" asks "Contributor No. 6123" for this information on his lay-out as given on page 92 of the May issue . . . . . .

EDITOR COTTON:

In the May 1934 issue of COTTON, in his article on page 92, "CONTRIBUTOR No. 6123" advocates running a 70-grain sliver at the card. In his article which appeared in the September 1933 issue, he stated, "My breaker drawing sliver weighs 75 grains and my finisher weighs 80 grains, both drawings having a 275 r.p.m. front roll speed. My slubber roving is .50-hank, intermediate roving 1.40-hank, warp speeder roving 4.00-hank and filling speeder roving 4.75-hank—and the stock is all from Strict Low Middling cotton."

Through the columns of this department, will you please ask "CONTRIBUTOR No. 6123" to give us the figured draft and actual draft from the card to the filling speeder? I for one will appreciate it.

WASH (R. I.)

The Story of Cotton

This is the eleventh of a series of advertisements telling the story of cotton from its earliest cultivation in India and Peru to present times.

XI. THE CROWN PRINCE

If cotton is King, then surely cotton seed is the Crown Prince in the hierarchy of Southern agriculture. But it is only in the past 100 years that the princeling has come into his heritage. For a long time after cotton conquered the South, cotton seed was regarded as a menace to the health of livestock, which ate it, and of humans, who breathed the somewhat odoriferous emanations of its decay. For these reasons many municipalities forbade the dumping of cotton seed within their corporate limits, and thousands of tons of a valuable commodity were thrown as waste into Southern creeks and rivers.

The first cotton oil mill in America was built at Natchez, Mississippi, and put into operation in 1834. It was followed in 1847 by another at New Orleans. The limited output of these mills was used in this country for fertilizer and in England as a stock feed; and it was not until after the War between the States that any quantity of cotton seed products was manufactured. In the 15 years between the close of the War and 1880, several mills were built, some of them successful, some of them failures. By 1880, however, the cotton oil industry was firmly established in the United States and gradually the English use of cottonseed cake and meal as stock feeds spread, while the oil, which had been used as a substitute for or adulterant of olive oil, was recognized as a vegetable oil of fine quality in its own right.

By the turn of the century, nearly every cotton producing community had its seed warehouse and seed buyers, and competition for seed was so keen that mill agents frequently employed runners to meet the farmers' wagons out on the road and solicit their seed. Then, too, the singularly Anglo-Saxon habit of cooking with animal fats was yielding large markets to cottonseed oils and cottonseed oil shortenings of excellent quality; and the fine feeding properties of cottonseed meal and cake for livestock were universally recognized. By that time, the industry was established.

The story since then is one of expansion, of mechanical improvement in oil mill equipment and of increasing use of cottonseed products. Today the cotton oil industry is entrenched as a major development in the South and Southwest, and cottonseed products—linters, cotton oil, cotton oil shortening, cottonseed cake, cottonseed meal, cottonseed hulls—make substantial contributions to the service of mankind.

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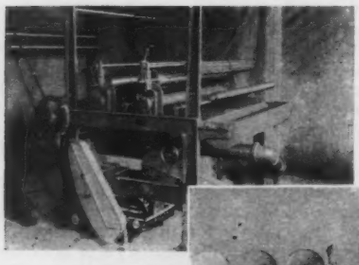

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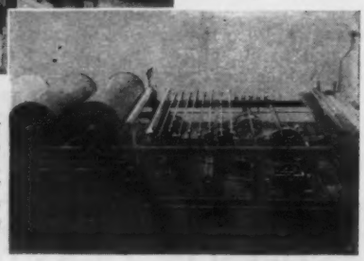

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Cleaning and Guarding Card Room Belts

EDITOR COTTON:

The belts in many mills do not receive the attention that they really require for efficient operation and service. They are often found with a veritable growth of "hair" on them, especially on the backs. The proper and regular application of a good belt oil or softener will add much to the life of a belt.

The operators of most of the machines in the card room will see that the face of the belt is kept clean. The frame, slubber and drawing hands, when paid by the hank, will keep their belts clean so as to get better production, and will report any slippage at once. Most card hands will report dirty or slack belts, as they make the job of starting up much harder. The practice of cleaning the backs of the belts once a week is good, but does not keep the belts clean at all times.

We have worked out a system to keep the backs of all belts clean; also a set of guards for the motor belts which eliminates the danger of their doing damage when thrown off from any cause. All motor and counter belts have a broom fastened over them, as in *A*, Fig. 1. This requires a hole bored in the ceiling directly over the belt into which the cut-off handle of the broom is forced and nailed. The brooms will last a surprisingly long time, and will make a great improvement in the looks of the top of the house.

We use two types of belt guards, *B* and *C*, Fig. 1. *B* is simply two lengths of flat iron bent in the shape shown, and fastened to the ceiling with two lag screws each. These are for very light belts only; I would not recommend them for a belt over four inches wide.

The guard shown at *C*, when properly made, will hold any size of belt, and should be used on any belt over four inches in width. The drawing should make its construction clear. Two pieces of flat iron, shaped into a flat V, are used, one for each side of the belt. These are given a half twist at the bottom and bored to take the pin that holds the roller in place. This pin should be of sufficient strength to hold the weight of the belt, with a head on one end and a cotter key in the other. The cotter pin is important as the nut might work off if it were not there and create an unnecessary hazard. It is not absolutely necessary to have the roller on the pin, but it will prevent possible damage to the belt. The roller should be two inches or larger in diameter.

In addition, for keeping individual drive belts clean, we use little brushes such as I show in Fig. 2. These can be made to fit any machine in the card room. The best brush for the purpose is the fiber brush commonly used in all mills for belt cleaning and other purposes. Each of these brushes can be cut into four pieces sufficiently large for this work. Discarded cleaning brushes of any type can also be adapted for this purpose. The fastener is a piece of heavy sheet metal cut in about a one-inch strip and slotted at the end. If this slot is made sufficiently long the ends can be bent out to go around almost any size bolt. The strip is fastened to the back of the brush with two wood screws. By varying the length of the strip and bending it in various shapes, it can be used on the belt on almost any card room machine. The cleaning brushes may be fastened either to the frame of the machine or to the belt shipper, whichever is more convenient. With a set of these brushes in place, a room will always have a clean set of belts.

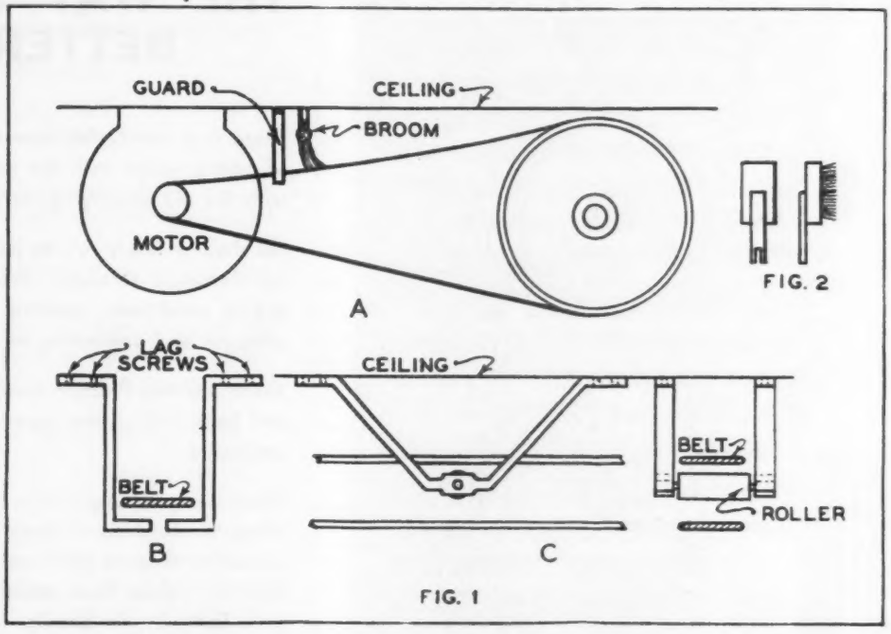

FIG. 1

FIG. 2

CONTRIBUTOR No. 6184.

Old-Timer's Letter on Sizing

(Continued from page 69.)

In making thin boiling starches, I understand the starch manufacturers treat the starch with acids and then by a washing process and the application of alkali neutralize the acid.

It has always been a questionable problem to me how this could be done without destroying to some extent the strength of the starch. At any rate, as explained above, numerous tests should be made at the individual plant to determine the best results from different consistencies of starch as well as the different kinds of sizing materials, the amounts of each and the time of each and the time of cooking.

If one plant cooks one hour that certainly cannot tell you that another plant should cook the same length of time, because you could hardly find two

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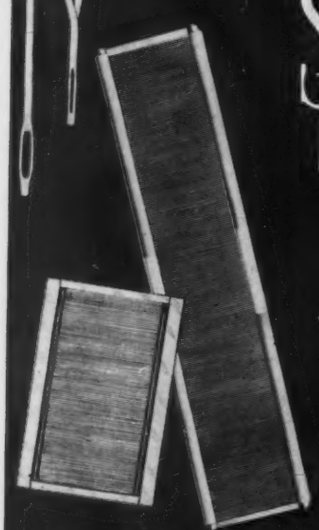

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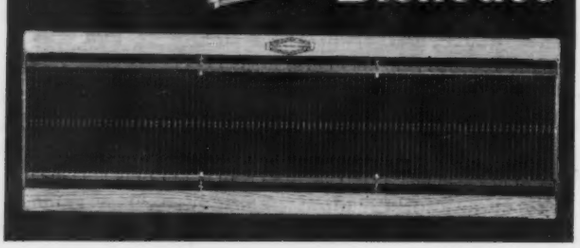

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plants with exactly the same steam conditions.

One slasher room may be located further from the boiler plant than the other—steam may be trapped better at one plant—the steam line may be better insulated and numerous other differences may exist.

And oftentimes a mill president, having two mills, cannot understand why No. 1 mill cannot do the same things that his No. 2 mill does.

Sincerely,

OLD-TIMER.

"Carder" Comes Through With Another Batch of Comments

An occasional contributor, who writes too infrequently, gives his ideas on a number of things . .

EDITOR COTTON:

Well, here I am again. Every now and then, as you know, I go back to past issues of COTTON and find scattered throughout several months a number of questions and then sit down and give you my ideas on them.

I would like to start with the card room questions submitted by "J. R. (GA.)" back in the March issue. I will repeat the questions and give my answers.

Answers Questions of "J. R. (Ga.)"

Question No. 1. *Do you think wrapping the roving on the flyer presser 2½ wraps is indispensable?* I have run whole sets with 1½ times and have found the bobbin too soft when full. This may have been offset by speeding up the winding some. Some years ago I ran Mitchell flyers and found it necessary to put 3½ wraps on the presser before I was able to get good results. It surely seems that with the type of flyer now being run 2½ turns are necessary.

Question No. 2. *Should other operatives except the frame tenders be allowed to repair breaks on fly frames?* I presume that by "breaks" he refers to ends down; if so, then the operative running the frames should be the only one to make the piecing.

Question No. 3. *Does dyed cotton always require more twist in roving than white cotton?* Yes, because the life of the cotton has been taken out in dyeing and some of the natural twist has been lost.

Question No. 4. *Should a section man do his own oiling, or should his job be increased and an oiler put on to do this work?* I have seen both ways tried out and it has been proven that a good many repairs are due to a lack of proper oiling. When the section man does his own oiling he naturally will do it properly so that he may save himself future work. This method has always proven with me to be the most successful.

Question No. 5. *Is it best for each frame hand to mark his own roving, or should a roving marker do this work?* Of course the hiring of a roving marker will be determined somewhat by the size of the room; where the room is large enough, this is best. I have always found that there are some frame hands who will try to cover up mistakes by not marking properly; this causes the blame sometimes to fall upon others and creates trouble. I would suggest that all frames be stopped when one-quarter full and the roving marked.

Question No. 6. *In case of a portion of a section running and the section man doing other work, such as sweeping, laying up roving, etc., should the section man's wages be cut, or should he be paid his regular rate regardless of the work he does?* He should be paid his regular rate. He is there because of his ability to repair machines if necessary. He is kept on the job and does this other work much better than the regular operative and should be appreciated.

Drawing Rolls and Settings

Now, turning to the May issue of COTTON, "CONTRIBUTOR No. 6123" has an article on "The Care and Operation of Drawing Frames", with which as a whole I can agree, but there are one or two items on which we differ. He calls it a "misfortune" to run a card room equipped with leather covered rolls. I should call it more of a misfortune for myself to take charge of a room wholly equipped with metallic rolls, for I have had much more trouble and bad work from these than from leather. There is surely something wrong with any formula for varnish that will not dry over the week-end, as he mentions. I believe that if he had used a proper varnish, his opinion of leather rolls would be changed.

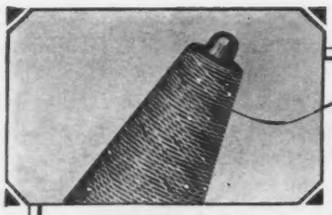
I agree with his preference for four-delivery draw-frames, but would add that there is an increase in production on them, over six-delivery, due to less stoppage.

But, I do not agree with him as to the setting of his draw-frame rolls. He sets his front to second roll ⅛-inch over staple; second to third roll ¼-inch over staple; and third to back roll ⅜-inch over staple—for a 45-grain sliver. I do not think this is enough, because owing to the bulk of cotton being handled by these rolls, the distances should be greater than those he gives.

He makes the statement that, "All of these settings are of course considered as from the center of one roll to the center of the next roll." On all draw frames with which I have had experience, the front steel roll was no smaller than 1⅜-inch; the top roll being 1 3/16-inch. When these rolls are held together by weights, the grip on the fibers comes either forward or backward from the center; this of course would require that a greater distance be allowed over the staple. This is on leather rolls. With metallic rolls this distance should be greater, as the grip is not so near the center, due to the meshing of the flutes. I cannot understand why he figures so many piecings, as he gives on page 67 of the May issue. If cans are built correctly they can be run from top to bottom without breaking.

Setting the Back Plate on a Card

Now, in this same May issue, beginning on page 71, "CONTRIBUTOR No. 6154" makes some comments with reference to card settings for a man running 1 1/16-inch Low Middling cotton, making a 55-grain card sliver, with 428 r.p.m. licker-in speed, 165 r.p.m. cylinder speed, and 11.5 r.p.m. doffer speed. His state-



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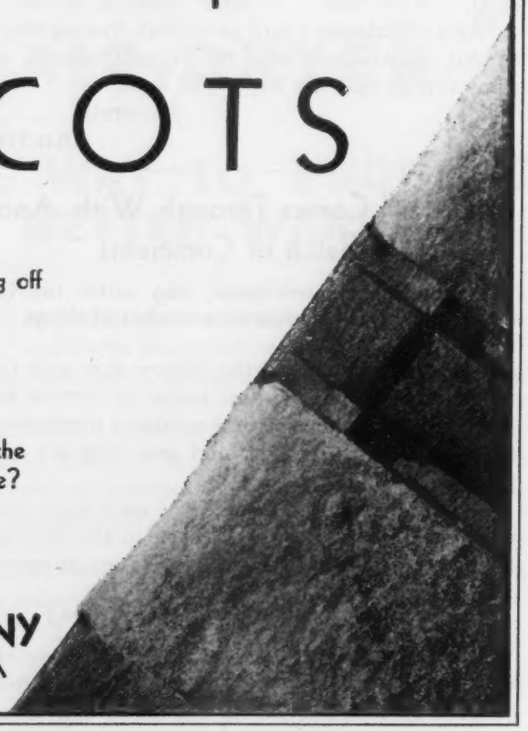

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ment that all cards cannot be set alike is true, for each card is an individual to some extent. I agree with most of the settings he has given for a card except I do not agree in his setting of the back plate to cylinder, which he gives as 29/1000. He speaks of the fibers holding close together and arranges his settings to provide for this. On the back plate setting, I would set the bottom closer than the top, and my reason is that as the fibers leave the licker-in, they are taken by the cylinder and immediately pass the bottom of the back plate, as they approach the first working flat they should be in a position for combing, by having the top of the back plate further away than the bottom this allows the fibers to lift away from the cylinder into the path of the flat to be combed, this is taking place between each flat due to the heel and toe arrangement of the flats.

In this letter I note he quotes "CONTRIBUTOR NO. 6172" who says that he sets his flats to the cylinder to a 10, except the front stand, which is set to a 17. Why he should set his front flat away from the cylinder I cannot understand. The flats at the front are pretty well filled with waste, and to do any carding they should be set closer than the rest.

Even Tension on a Speeder

Going now to the July issue, page 69, "L. S." has an article in which he quotes from "D. W. (N. C.)" whose article on "Comparing the Strength of Yarn from the Back and Front Fly Frame Bobbins" originally appeared in December 1927. Toward the end of that article, "D. W." states that he has never been able to get a uniform tension throughout the doff, and mentions how he tried to remedy this fault. He said, "Immediately after doffing the ends are too tight, gradually getting the proper tension after several layers have been run on the bobbin. Setting the cone belt at different places on the cone when starting up on the empty bobbin and changing of tension gears to make up for the difference has not produced the desired results." "L. S." simply states that he has had no such trouble on his frames but does not tell how this trouble may be remedied. I will try to give the remedy.

Should I have trouble similar to this I would first try the adjustment of the cone belt as "D. W." describes. Not getting the desired results from this, I would then go through my winding and check on my cone change gear. Here I believe will be found the trouble. I should put on a smaller gear and then adjust the cone belt. When "D. W." says that the ends start up very tight, this shows that the bobbins are running too fast for the amount of yarn being delivered. Besides adjusting the cone belt, the tension gear must be changed and possibly the lay gear. With the combination of cone gear, lay gear, tension gear and cone belt adjusted, a correct wind can be placed upon any speeder.

Open Versus Closed Flat Settings

Turning over to page 79 of the July issue, "CONTRIBUTOR NO. 6226" asks readers to submit tests showing the effect on breaking strength with close and open settings of the flats. I have no such data but will state that I am acquainted with carders who set their flats as close as conditions will allow, because of the better carding, and I know that they must not do anything that will take away the breaking strength of their yarn. I should like to see this data and will at the first opportunity make some tests along this line.

On this same page 79 of July, "CONTRIBUTOR No. 6242" submits some card room questions and gives his answers. They are good, but I would suggest that, as to the causes of neps, he has one more cause, and that is, not stripping enough. I do not agree with him about oiling speeder spindles. He says that for two years he has been oiling only the bobbin gears. I maintain that best results and best length of service are obtained by oiling the spindles regularly at the bolsters and the steps.

"Wash's" July Flv Frame Problem

On page 83 of the July number, "WASH" submits the following question: "On a fly frame, every little while the ends slacken and then pick up again, but in almost every case a few ends break down. There is no slipping of gears in the train of gears from the bottom cone gear to the bobbin gear. The cones are tight on their shaft and do not slip. All keyed gears and keys are in perfect condition. When this condition happens, the first thing the practical man will do is to put belt dressing on the cone belt or change the cone belt, which will not help the situation."

I have had this trouble, but only on one make of frame, and it took some time to find the cause. More than once when this happened the head of the frame was taken down and thoroughly inspected, put together again and started up and sometimes would run a day before happening again. This was not happening at any repeated r.p.m. of gears but only occasionally. After much thought and examination we found that it was caused by a compound gear slipping. These gears were in the horsehead train and one gear was shrunk on the other hub, for some reason this worked loose during the operation; after finding this we had a key put in and had no more trouble.

Asks "Wash" to Meet Some Folks

I have read carefully the comments about "WASH" made by "A. T. G." on page 78 of the August issue, and I can heartily endorse all that "A. T. G." says. I have been a subscriber to COTTON for 30 years and I have never read articles such as "WASH" writes about the textile schools and textile graduates. I have come to the conclusion that either "WASH" started attending a textile school and could not keep up with the work laid out or he has come in contact with a textile school graduate who has shown him up and he is still sore about it. In all my connections with the industry I have never known textile schools or graduates to be swell-headed enough to believe that they could start at the top and the top only and not fall. All of the textile school instructors with whom I have been acquainted have taught the students that they will only have a foundation on which to start and that with proper application they should be able to advance more rapidly than those who had not had this education.

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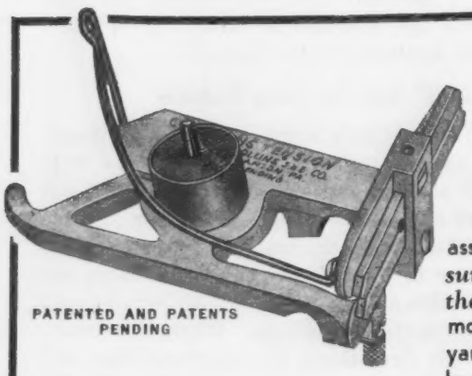

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Of course there will be found some students who will not listen to reason and go out and make a show of themselves and in this way cast reflection upon the schools. I honestly believe that if "WASH" would have a talk with some of the instructors in our textile schools he would look upon the schools and students in a different light.

CARDER (MASS.)

On Checking Finisher Lap Weights

EDITOR COTTON:

It has customarily been the duty of all carders to make a daily check on the finished lap weight. I might ask, why do we check up on the lap weights every day after we have charged the lapper tender particularly to set aside all laps that are under or over the standard weight? Someone might answer, "Because we do not take things for granted in such a haphazard way." Then probably someone else would say, "It is because of the lack of confidence I have in my lapper tender." Then I suggest that such men ask themselves the question: If I were a lapper tender, would it be necessary for the boss to check up on me? Ah, but man is weak! "Would I hire myself for my job?" is a wise saying by OLD-TIMER that surely put me to thinking, and because of the lack of a superiority complex I haven't as yet settled that question with myself. I guess I had better not go too far into detail in regard to human nature because the more I think of it the more complicated it seems, but instead let me tell you of a true incident that occurred between Joe and his boss, when Joe was running pickers.

"Good morning, Joe. How are the lap weights running this morning?"

"Very good, sir."

Now Joe was a good sort of fellow, very meek, and had a reputation of being truthful and reliable, but just then the picker knocked off to doff. Joe put the lap on the scales and the weight was one pound off from the limit allowed. Joe set the lap aside as usual. The boss, being the kind of fellow not to take things for granted although he had confidence in Joe, looked at his watch and it was 10:15 A. M. As he walked out of the picker room he counted Joe's laps and there were 50 in all. Now Joe's boss knew that these finishers would complete a lap every eight minutes. Therefore, the three machines would complete six laps in 16 minutes, and so the boss walked up the card alley in sight of Joe, so as to let Joe know he was leaving the picker room and also to see if there were any laps to be taken out by the card hands. No, the racks were all full, with plenty of time for the test.

Now the boss counted the time—10:15 plus 16 minutes would be 10:31, and Joe would have 56 laps in his lot. The boss returned to the picker room at 10:33, just as Joe was completing the second doff since he had left the room, but to his surprise he found that Joe had 57 laps. Yes, Joe admitted putting the lap he had set aside to be run over into the regular lot, and this accounted for the extra lap.

No, the boss did not fire Joe but it surely taught

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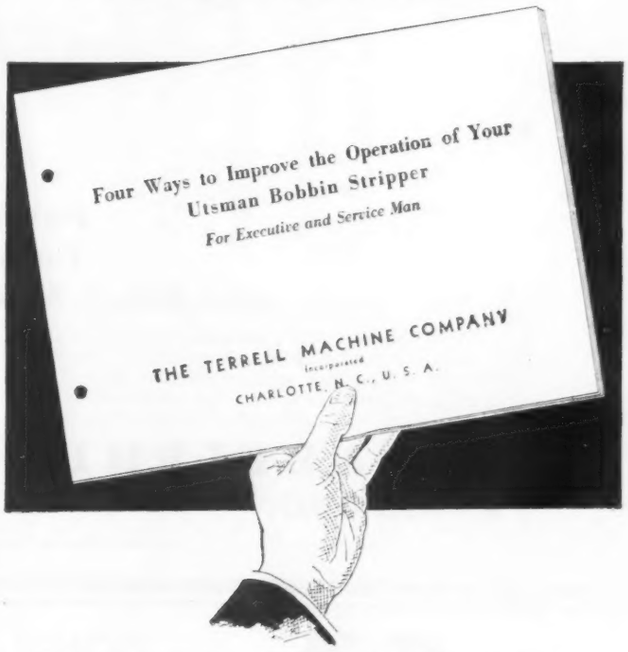
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Joe a lesson as he doesn't seem to do things of that kind any more. The boss says that he couldn't find a lap off weight in Joe's lot now—he would bet on that —but he still checks up for Joe's sake.

Now as to checking laps at a certain hour each day, this is surely pound-foolish. The best method of checking up on the lap weights that I have found is something like this: Monday morning, check lap weights at 8 o'clock; check again at 8:30; check again at 8:45. Then you have the tender guessing. Then go on a schedule for a few days and jumble the checking hour up again and so on, and you will find after awhile you can skip a week or more and never check, and if the lapper tender is interested, he will be looking for you at any time. Why not train them; someone will have to do it—I mean by this to train the help to be fair and square. I find it is a better policy than to fire them.

T. R. (N. C.)

A Lay-Out for 5.00-Hank Roving

"Wash" gives an inquirer his ideas as to an ideal lay-out for making an even roving. What do you think of his roll speeds? . . . . . .

In the "How Other Men Manage" department of the April issue of Cotton, "Wash" made the statement that in different mills which he has visited he finds "66-grain sliver at the card, 75-grain drawing sliver, .45-hank slubber roving, 1.25-hank intermediate roving, and then a jump to 5.00-hank fine frame roving." Then he went on to say that he says nothing about this for he knows that he is then up against a "long draft boy".

After the appearance of the April issue, a reader, commenting on this statement, said, "Through 'How Other Men Manage' would you mind having 'Wash' outline an organization which he thinks would be more suitable for making a 5.00-hank roving that would make the work run more evenly? If possible I'd like to see an open discussion on this subject."

This request was transmitted to "Wash" and below is given his answer, on which the comments of other readers will be welcome.

Editor Cotton:

The reader wishes to know the best organization for making a 5.00-hank roving more evenly. There are of course many reasons for uneven yarn; however, the chief reason is frictional contact between the top roll and the bottom steel roll, known as the actual draft. Let us go back to the early 90s when we would find the railway head in operation in most mills; 10 slivers were run into one head and the weight of the sliver ranged from 90 to 115 grains per yard. Next, when the revolving flat card was introduced, it was common to find a 75 to 85-grain carding sliver. To reduce this heavy sliver, three processes of drawing were required. Later, a 60-grain carding sliver was adopted, and for years it was common to find a 60-grain finished drawing sliver also. So it can be deduced that it was the actual draft that made the work uneven. So, instead of having 48 cards for 60 deliveries of finished drawing, we now have in all up-to-date mills the number of cards equal to the number of draw-

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THE AKRON BELTING CO. SPIN-TWIST AKRON, OHIO

FULL THICKNESS

THE AKRON BELTING CO. ESTABLISHED "AKRON" 1885 AKRON, OHIO, USA

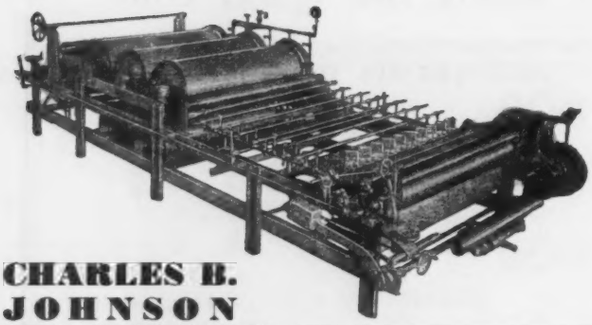
"We are mighty glad to get rid of cone pulleys and slip belts"--Say Users of New **JOHNSON RAYON SIZERS**

Many mills which have recently installed new silk and cotton system Johnson Sizers, tell us how glad they are to get rid of cone pulleys and slip belts.

The patented change gear box, which has eliminated cone pulleys, gives positive control of stretch. Tension is uniform throughout the warp. This device, too, permits keeping a record of the tension so that results for any type of warp can be duplicated at any time.

Other features include: Friction-Disc Loom Beam Take-up Drive . . . One Unit Main Drive (Patented) . . . Electric Predetermined Counter . . . Simplified Cut Marker . . . Special 3 Roll Quetsch for running any type yarn . . Movable Immersion Roll . . . Change Gears to avoid necessity of building up and tearing down draw rolls.

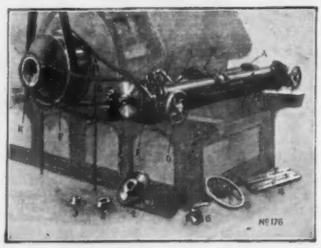
Write for descriptive folder.



CHARLES B. JOHNSON
PIERCY AND HOLSMAN STS., PATERSON, N. J.

Representatives:
Joseph Barnes, New Bedford, Mass.
Carolina Specialty Co., Charlotte, N. C.

The New Dronsfield Invention



Dronsfield's Patent Portable

AUTO-FEED "NEEDLE-POINT" GRINDER No. 176

for re-vitalizing Cylinder and Doffer Clothing

TESTIMONIALS FROM ALL PARTS OF THE WORLD

"Highly pleased — repeat order. Have ground cards over 20 years old, now equal to cards 6/8 years old."

"Very satisfied—will gladly recommend; better carding and stripping."

"Could not have believed it possible — Slivers improved in lustre, cleanliness and regularity."

"The side grinding is good and the operation easy. Carding much improved."

"Apart from the great utility of the Grinder considerable economy has resulted."

"Have been able to grind clothing dating from 1907 in such a manner that it is now working faultlessly."

AND MANY OTHERS

These are not our reports; they are made by satisfied users of the new Dronsfield "Needle-Point" Grinder

Sole Agents for the U. S. A.

JOHN HETHERINGTON & SONS, INC.,
250 DEVONSHIRE ST., BOSTON, MASS.

DENMAN LOOP PICKERS

are standing up with the best grade of leather pickers. The are cheaper, but we ask no consideration because of price.

Every Denman picker comes from the mold exactly like its brother. They look alike, they wear alike. Rights and lefts need not be specified. Denman Pickers fit either side of the loom.

Some mills have tried fabric pickers that didn't last, but they were not the new Denman Loop Pickers.

Try Denman Loop Pickers for your own benefit. Price and service life considered, they are best.

Full information freely given.

DENMAN TIRE & RUBBER CO., Warren, Ohio

Sou. Rep.: Terrell Machine Co., Charlotte, N. C.
Rep. for N. J., Pa., and Southeast N. Y., Fisher Textile Pur. Co., 269 S. 59th St., B-302, Philadelphia, Pa.

ATLANTA HARNESS - REEDS FRAMES - HEDDLES ATLANTA HARNESS & REED MFG. CO. ATLANTA, GEORGIA

ing deliveries.

Friction means the resistance offered the top roll to cause it to lag, and if the resistance is steady, the strand will be fairly even but heavy (which means a slow revolving front roll) but it is seldom that any friction is steady, and instead it is an unequal intermittent action on the top roll that makes the strand uneven in places.

In some of my articles I have pointed out that I was forced to have a draft of .969 between the front and calender rolls on the drawing owing to a great amount of frictional contact. Such a condition should never exist.

Again, it should be borne in mind that the defective work has little chance of being remedied, for the reason that the last portion of the strand to leave the preceding process is the first to enter the succeeding process; in other words, the fibers make a complete somersault from one process to another.

Again, it should be borne in mind that frictional contact exists between the top and bottom roll even when no stock is run.

As overseer of carding and superintendent for the past 40 years, my ideal organization for a 5.00-hank roving follows:

Draft of card, 100. Weight of sliver, 50 grains. Drawing, 1st head, draft 6.00; weight of sliver, 50 grains; r.p.m. front roll, 400 for leather or common roll. Drawing, 2nd head, draft 6.10; weight of sliver, 50-grain; r.p.m. of front roll, same as first head. For metallic rolls, 425 r.p.m.

The draft of 6.10 on the last head is to make up for the actual draft.

Slubber draft, 3.10; hank roving, .55-hank; r.p.m. front roll, 189.

Intermediate draft, 5.60; hank roving, 1.51-hank; r.p.m. front roll, 150.

Fine draft, 6.80; hank roving, 5.00-hank; r.p.m. front roll, 117.

The less the frictional contact, the faster you can run the front roll. In other words, you get the same production but the strand is a good deal more even.

The foregoing should be easily seen, because the more freedom you give the front top roll, the faster you can drive it. On the other hand, you are unable to speed up a roll that is already overworked.

So, with the foregoing hang up, you can make an almost even sliver with the same production as that of a heavy sliver.

To those who may disagree with me, may I inquire why we reduce the strand from 115 grains to the yard down to 50 grains?

With the foregoing organization we have draft as follows:

$6 \times 6.1 \times 3.1 \times 5.6 \times 6.8 = 4320.557$

$4320.557 \times .166 = 717.21+$

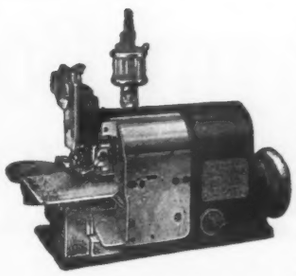
Doublings: $6 \times 6 \times 2 \times 2 = 144$

$717.21 \div 144 = 4.98$-hank roving.

The above are the figured drafts and it can be seen that you get almost the desired hank of 5.00.

An allowance has been made at each process following the first head of drawing for loss by the actual draft and contraction of twist.

WASH (R. I.)



TRADE MARK

MERROW

REG. U. S. PAT. OFF.

HIGH SPEED TRIMMING AND OVER-SEAMING OVEREDGING AND SHELL STITCH MACHINES

FOR USE IN THE FABRICATION OF KNITTED AND WOVEN GOODS OF ALL KINDS.

—200 VARIETIES FOR 200 PURPOSES—

WRITE FOR DETAILS REGARDING

MERROW STYLES 60ABB AND 60D3B MACHINES

PRODUCING A FLAT BUTTED SEAM (AS ILLUSTRATED BELOW) TO FACILITATE SUBSEQUENT PROCESSING OF TEXTILES

FINISHERS REPORT DEFINITE SAVINGS BOTH IN LABOR AND FABRIC. LET US DEMONSTRATE WORK OF THESE MACHINES ON YOUR OWN PRODUCT.

THE MERROW MACHINE COMPANY

16 LAUREL STREET HARTFORD, CONN., U. S. A.

Southern Representatives:

E. W. Hollister, P. O. Box 563, Charlotte, N. C.

R. B. Moreland, P. O. Box 895, Atlanta, Ga.

Dollar Saving Method---Tested in Mills

NON-FLUID OIL is used by 7 out of 10 leading mills—year after year—because it saves them money on production costs.

NON-FLUID OIL does not drip or leak like liquid oils. It "stays put" in bearings controlling friction dependably, thus preventing wear and costly shutdowns.

Staying in bearings and off cloth, NON-FLUID OIL helps prevent oil spots. Outlasts liquid oil 3 to 5 times.

Check these savings in your own mill. Write today for testing sample.

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Main Office: 292 Madison Ave., New York, N Y.

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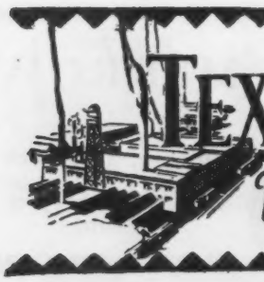
NON-FLUID OIL

MODERN TEXTILE LUBRICANT

Better Lubrication at Less Cost per Month



TEXTILE BOOKLETS *Worth Writing For!*

The booklets or catalogs briefly mentioned below may be obtained by any readers of COTTON who will write to the Company issuing them or to COTTON, Grant Bldg., Atlanta, Ga.

2. Pepperell Equipment—10 page illustrated booklet showing High Speed Warping from cones as adopted by Pepperell Manufacturing Company after thorough experiments, installation and product photographs. Issued by Universal Winding Company, Boston, Mass.

10. Leathers, Textile—Booklet No. 101, 48 pages, illustrated. Showing "Bondaron" Check Straps—Lug Straps—Harness Straps—Pickers—Belting, both round and flat, etc. Horsepower tables and other interesting information. By Charles Bond Company, 617 Arch Street, Philadelphia, Pa.

11. Whitinsville Rings—16 page illustrated booklet, describing ring manufacture, measurements, types, uses. How to determine flange sizes. By Whitinsville Spinning Ring Co., Whitinsville, Mass.

15. The Powers System of Thermostatic Control—"**Slasher room is Bottle-Neck of Textile Mill.**" 18 page illustrated booklet showing importance of proper treatment of cloth in slasher room and advantages of Thermostat over hand control. Also room temperature control illustrations. Issued by Powers Regulator Co., 2739 Greenview Ave., Chicago, Ill.

21. Warp Sizing and Composition of Cotton—Folder containing reprints of articles carried by textile publications of interest to progressive mill superintendents. By Seydel-Wooley Co., 748 Rice St., Atlanta, Ga.

23. Practice of Rayon Sizing in American Mills, Raygomm, Lakoe Gum—Three booklets on products for sizing and finishing rayon and other textiles, presented by Stein, Hall & Co., Inc., 285 Madison Ave., New York, N. Y.

25. "Lupogum" and "Monopole Oil"—Two booklets on textile sizing and finishing products. Jacques Wolf & Company, Passaic, N. J.

28. Akron Belting—Practical Rules and general information for users of belting with belting catalog. By Akron Belting Co., Akron, Ohio.

29. Continuous Card Stripper—A 20 page booklet describing in detail continuous card strippers, their advantages, the power required to operate, etc. Saco-Lowell Shops, 147 Milk St., Boston, Mass.

30. Lubrication of Textile Machinery—32 pages, illustrated. Data covering the economical lubrication of all textile machines. New York & New Jersey Lubricant Co., 292 Madison Ave., New York, N. Y.

38. Sleaziness in Full Fashioned Knitting—Illustrated survey with samples of fabric showing causes of sleaziness and methods to be employed in eliminating it.—By Textile Machine Works, Reading, Pa. (This company also issues parts catalog for Reading full fashioned machines with general information on subject of full fashioned knitting.)

55. Interpretation of Analysis for the Layman—An eight page booklet explaining what the various items used in fatty oil and sulfonated oil analysis mean, enabling the ordinary textile man without chemical education to interpret the various chemical analyses. National Oil Products Co., Harrison, N. J.

63. S-W Paint Standardization Plan—valuable booklet telling how protective coatings can effect economies in plant operation and maintenance, describing how each surface is finished to best meet its specific needs, giving ideal lighting and sanitary conditions and economies in increased production. Sherwin-Williams Co., 601 Canal Rd., Cleveland, Ohio.

64. Efficiency and Performance of SKF Roller Bearing Spindles—A twelve page booklet showing the advantages in power consumption, increased production, savings in lubrication, increased yarn breakage strength to be secured through roller bearing spindles. SKF Industries, Inc., Front St. and Erie Ave., Philadelphia, Pa.

65. Why Cooper Hewitt Light is Better Than Daylight—A 16 page booklet explaining in detail the importance of good lighting and the necessity of proper quality as well as proper quantity of light. General Elec. Vapor Lamp Co., Hoboken, N. J.

66. Dronsfield's Patent Portable Auto-Feed Needle Point Grinder No. 176—describing a new departure in card grinding—John Hetherington & Sons, Inc., 250 Devonshire St., Boston, Mass.

72. The Merrow Butted Seam—A 16-page booklet defining and illustrating the Butted seam, describing its properties and outlining some of the advantages to be gained by its use in textile fabrics. The Merrow Machine Co., Hartford, Conn.

77. Bulletin S 200—Illustrating and describing the new Reeves Variable Speed Drive for spinning and twister frames, explaining its many distinct advantages, and giving charted results of exacting tests. Reeves Pulley Company, Columbus, Indiana.

78. Booklet L 1289 A—Loom Motors and Control—giving details of the low installation, operating and maintenance cost of Westinghouse Loom Motors. Westinghouse Electric & Manufacturing Company, Room 2-N, East Pittsburgh, Pa.

88. Dayton Cog Belt Catalog—A 32 page booklet full of vital information on power drives, plainly and simply assembled and arranged so that anyone can select the proper standard drive for any condition. It also provides data for the calculation of drives where acquired. The Dayton Rubber Mfg. Co., Dept. C-11, Dayton, Ohio.

90. Atwood Baaklet—Describing Atwood Winders, twisters, wire swifts, and various types of feed rolls—useful to throwsters interested in learning the principal features of various Atwood machines. Atwood Machine Co., Stonington, Conn.

91. Illustrated Buyers' Guide and Catalogue—Of interest to every dyehouse executive, not only telling what dyehouse equipment is available in Monel Metal but also where to get it. The International Nickel Co., Inc., 67 Wall St., New York, N. Y.

93. Metso — Describing this industrial cleanser which has wide use in industrial cleaning of metals, floors, etc., and is used in kier boiling, silk and rayon degumming. Philadelphia Quartz Co., 121 S. Third St., Philadelphia, Pa.

94. New Development by Onyx — Eight page booklet describing and giving uses of new developments in sulphonated aliphatic compounds . . . called Aliphatic Ester Sulphate and Glyceryl Sulphates. Onyx Oil & Chemical Co., 15 Exchange Place, Jersey City, N. J.

97. Suggestions For The Modern Silk and Rayon Throwster — describing the various uses for Laurel Brand Products and giving valuable suggestions in silk-soaking, degumming, dyeing, sizing and finishing. Laurel Soap Mfg. Co., Inc., 2600 East Tioga St., Philadelphia, Pa.

98. Saving Labor, Material and Power in the Textile Industry. A 20 page booklet showing the advantages and typical installations of temperature, pressure and humidity instruments and controllers in various processes of textile manufacturing. Foxboro Co., Foxboro, Mass.

106. Cotton System Warp Sizing on Multiple Cylinder Machines—a folder showing the advantages of this type of machine in making warps of acetate and other synthetic yarns and spun silk — Charles B. Johnson, Paterson, N. J.

107. Complete Information on Alemite Lubrication. Showing how costs can be reduced through proper lubrication. Alemite Corp., 1828 Diversey Blvd., Chicago, Ill.

108. Thickening Materials for Textile Printing—discussing the more important materials and methods employed in the preparation of color thickening so that it may be properly and economically transferred to the cloth in textile printing. Stein, Hall & Co., Inc., 285 Madison Ave., New York City, N. Y.

110. 3-In-One for Industrial Uses—showing the many industrial uses and advantages of this oil. Three-In-One Oil Co., 70 Varick St., New York, N. Y.

114. Denman Parts for All Makes of Looms—showing drawings and dimensions of Denman pickers, hold-ups, bumpers, and bunters made of fabric and vulcanized rubber. Denman Tire & Rubber Co., Warren, Ohio.

115. How to Cut Cloth Room Costs with Automatic Picking Machines and Improved Inspecting Machines—Hermas Machine Company, Walburton Ave., Hawthorne, N. J.

117. Anti-Friction Bearings as Applied to Spinning, Drawing and Twisting Frames—This bulletin shows with detailed drawings how a simplified design of roller bearing applications is made to replace the plain babbitt bearings and lists the advantages that are gained. It deals primarily with better continuous production and in consequence freedom from equipment care and repairs. Hyatt Roller Bearing Co., P. O. Box 476, Newark, N. J.

118. Cotton Picking, Opening and Cleaning Machinery, Cards, Combers, Roving, Drawing, Spinning, Twisting, Rings, Worsted Machinery and Woolen Machinery — Pamphlets are issued on each of the individual machines. Will be sent to subscribers who make requests on the letterhead of the mill and indicate special pamphlets desired. Whitin Machine Works, Whitinsville, Mass.

119. The World's Finest Sewing Machines—a condensed catalog giving details of the various Willcox & Gibbs sewing machines. Willcox & Gibbs Sewing Machine Co., 658 Broadway, New York, N. Y.

120. Goodyear Mechanical Rubber Goods Catalog—40 page catalog giving practical information and tables helpful in the selection of the proper belting, hose or packing to suit the requirements of the mill. Goodyear Tire & Rubber Co., Akron, Ohio.

121. Engineered Packages for the Textile, Dry-Goods and Apparel Industries—Showing the savings to be made through the use of properly engineered packages of corrugated fibre in the shipping of yarn, woven and knitted products. Hinde & Dauch Paper Co., Sandusky, Ohio.

122. Water Filters and Filtration Equipment—Containing complete description of the chemical processes involved in the coagulation and precipitation of foreign matter, the removal of iron, oil, manganese from water and the production of clean water suitable for the textile industry, together with tables of specifications for standard filters, and information showing the extra profits to be made by the mill through reduction in costs and process difficulties, through removal of undesirable impurities in water. Permutit Company, 330 W. 42nd Street, New York N. Y.

124. New Condensed Catalog on Ball Bearings and Power Transmission Units—Combines all of the information and the industrial uses of radial ball bearings as well as the Fafnir power transmission line of wide inner ring and ball bearings. It gives complete information, interchangeability tables dimensions, prices, etc. Fafnir Bearing Company, New Britain, Conn.

125. More Light with Lasting Cleanliness—a booklet pointing out the many advantages of white paint and the qualities to be looked for to get the greatest value in such paint. U. S. Gutta Percha Paint Company, Providence, R. I.

128. Houghton's Handbook for the Hosiery Dyer—This 32 page handbook, prepared by the Houghton Research Staff, gives formulas for boiling-off, dyeing and finishing many types of knit goods. Also contains several pages of reference tables, conversion tables, etc., of constant value to every dyer. E. F. Houghton & Co., 240 W. Somerset St., Philadelphia, Pa.

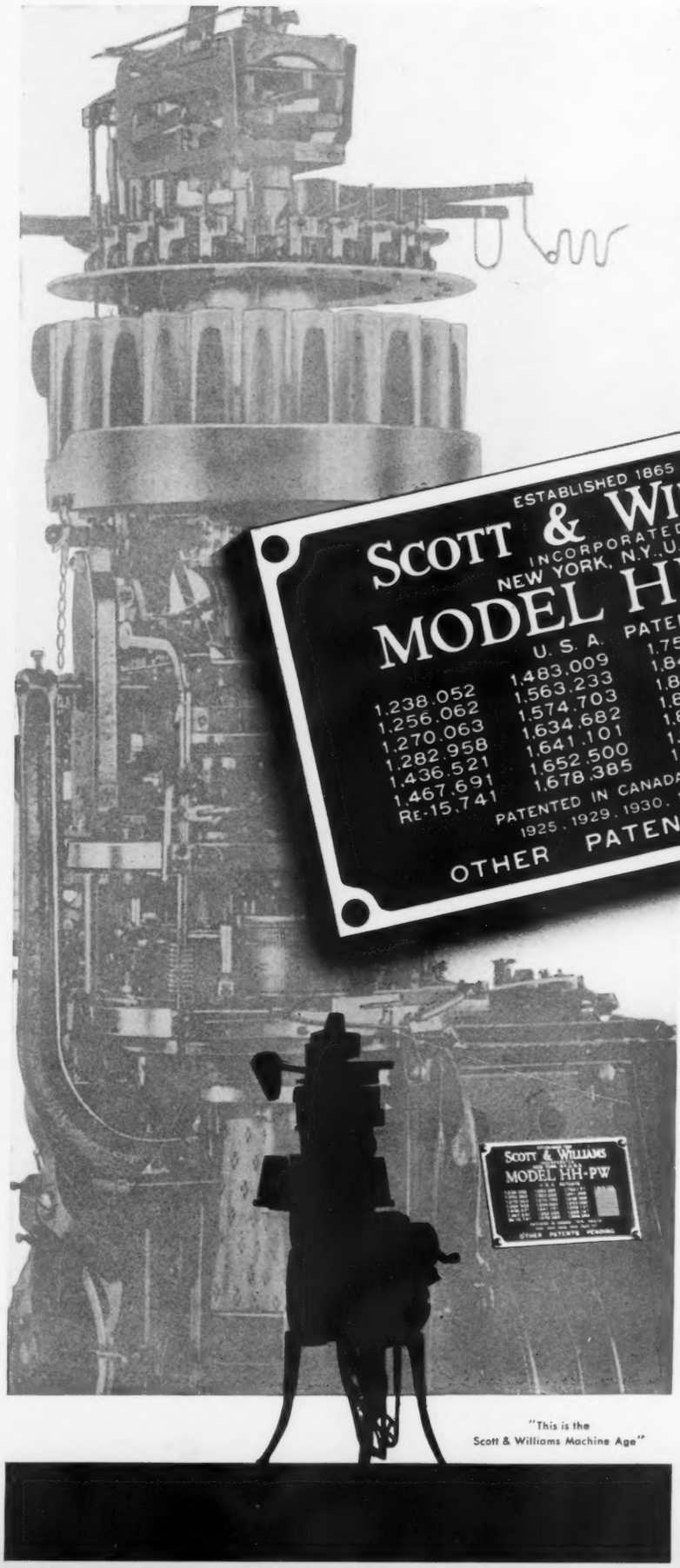
135. The Pick Method of Weaver Wage Payment—A manual of practical information describing methods to be followed in using Pick Counters; suggested forms, and tables included. Durant Manufacturing Co., 1932 No. Buffum St., Milwaukee, Wis.

138. Constant-Level Oilers—Booklet describing oilers which maintain correct oil level at all times, preventing burning out of motors and bearings. Gits Bros. Mfg. Co., 1851 S. Kilbourne Ave., Chicago, Ill.

139. Textile Detergents—Theory of the use of alkalis and control of pH.—This 32 page booklet explains in simplified manner for the benefit of the layman the chemical processes that take place in using textile detergents in the finishing of textile goods. It contains many useful tables and data. Detergent Products Corp., Peachtree Bldg., Atlanta, Ga.

140. Textile Machinery—Improvements in Design and Methods of Lubrication. A discussion of the problem of lubrication of textile equipment, covering operating conditions and factors affecting and affected by lubrication. Card Room Operations, Twisting and Spinning Machines, Silk Throwing, Looms, Knitting Machines, etc., covered. Available in copy of June 1934 issue of "Lubrication." The Texas Company, 135 E. 42nd St., New York City.

KNITTING SECTION



"This is the Scott & Williams Machine Age"

THIS PLATE

on a machine means that a seventy year reputation is behind it

● In presenting the model HH-PW, Scott & Williams make another outstanding contribution to the art of half-hose knitting. For incorporated in it are all the desirable features of the well known HH; and in addition, it makes true wrap possible at low cost.

The Model HH-PW-24 wrap yarns, 18 steps, 3 colors, vertical.

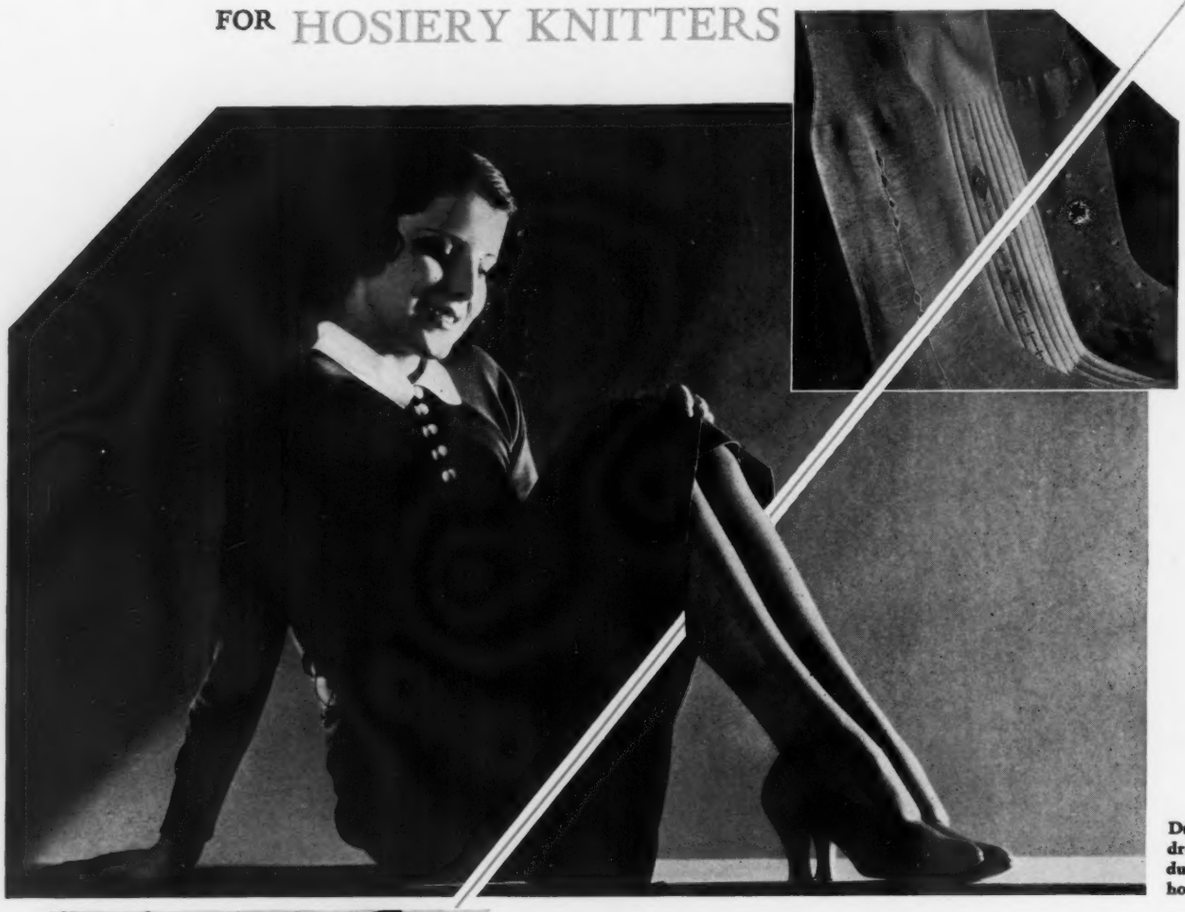
ESTABLISHED 1865

SCOTT & WILLIAMS

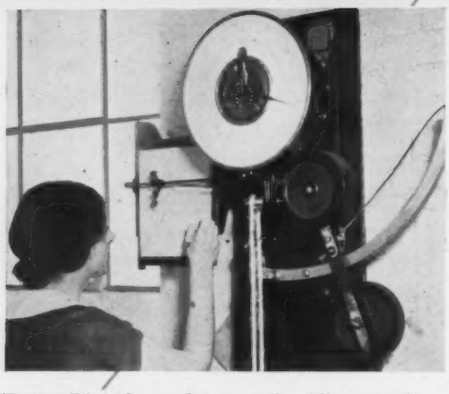
INCORPORATED

366 Broadway, New York, N. Y.

What CONTROL-MANUFACTURED DIXIE *Durene* IS DOING FOR HOSIERY KNITTERS



Durene dress .. durene hosiery



Testing Dixie durene for strength. All test readings must meet or exceed high standard requirements.

We carefully heed the requests of hosiery knitters who say "Give us strong yarn." We realize that strength makes wear, so we start building strength into Dixie durene by using only long-stapled cotton.

Next, we look to the mercerizing process itself. Here there is shrinkage that builds strength if it is controlled to avoid over-tension. We regulate tension with carefully adjusted, ball-bearing mounted rollers throughout all Dixie mercerizing machines. Then we preserve this strength with air drying that prevents brittleness or lifelessness.

To top off controlled manufacture's quest of strength our testing stations and control laboratory make almost hourly use of all 4 of their skein and strand-break testing machines. Weak yarn has no chance to "get by" under controlled manufacture.

Dixie durene is more than meeting hosiery knitters' needs for strong yarn because of carefully controlled production methods. Let Dixie ship your next order of mercerized yarn.

DIXIE DURENE - - A Product of Controlled Manufacture

DIXIE MERCERIZING COMPANY

CHATTANOOGA - TENNESSEE

A Comment on the General Situation in the Knitting Industries

AS MANUFACTURERS in the major divisions of the knit goods industry approached the end of the first half of 1934 and contemplated the July inventories, which in the retail trade may have a considerable bearing on the outlook for the second half of the year, opinion was general as to existing and recent conditions. The situation in hosiery, underwear and knitted outerwear as it was diagnosed at that time called for heroic treatment, and it was well indicated that out of a maze of proposed remedies, something applicable more specifically to an hysterical hosiery market would be prescribed. Underwear and sweaters were in a between-seasons position, while hosiery faced a traditionally anemic condition.

It was a foregone conclusion that much self initiated yet involuntary curtailment of hosiery output would be witnessed during July and August. How much further this may be carried by orders from the front still is conjectural, depending in part on the extent to which quantity buyers may come to market for anticipation. At this writing the prospect of any momentous buying wave in the heat of summer for fall retailing appears somewhat hazy, judging from the attitude of some of the more important dealers toward price. A 69-cent price for 4-thread 45-gauge stocking of standard construction during a promotion sale in a representative women's specialty shop had a good response from consumers. Even a lower price was noted in a retailing establishment officially classed as one of the three distinctively specialty shops of A grade in Philadelphia—George B. Allen's, Inc.

It was common comment among buyers for representative shops and department stores that the bulk of the business in hosiery is in a range of prices topped by 69 cents, and it was freely predicted that 50-cent silk full-fashioned will, before the end of summer, be a popular item representing the lowest bracket for what may be described legitimately as first grade. This probably will appear as ridiculous as forecasts some years ago of dollar full-fashioned six-months before that price established a popular bracket.

Price, no less than standards, will receive careful consideration at the hands of framers of codes and modifications thereof for relief from the major ailment of the hosiery industry as popularly diagnosed. This obviously involves the processes by which curtailment of production shall be effected. And the simpler problem will be that of machine hours regulations. If this question can be satisfactorily disposed of without causing top-heaviness of the price structure, there should be reasonable activity even before the end of the traditionally stagnant period and calling for prompt preparation for fall. There is foreseen a possibility that any changes adverse to consumer interests, unless accompanied by compensating changes in purchasing power, might offset at the outset what is expected to be achieved through manipulation of the industrial balance wheel.

The profits from the production and sale of hosiery, notably women's full-fashioned and men's half-hose are near the vanishing point needs no confirmation, goes without saying. In existing conditions, with uncharted seas still to be navigated, there will be little disposition to take a speculative course. With speculation detoured, the hosiery industry seems likely to rest up for a time, particularly since the national organization of retailers was, at last account, groping its way through a confusion of code provisions and proposed modification.

It is to be regarded a hopeful sign that at a meeting of hosiery fair trade practice code authorities in New York on June 15 there were present a number of buyers for the trade and other representatives of merchandising interests, who, it appears, are not so much disturbed over the establishing of standards and practices as with the effect. The consumer element has been heard from through a few designated social economists, but it is a question among those actually engaged in distribution and meeting the customer at the counter, whether consumer sentiment is not better expressed in direct contact of seller with buyer.

As was expressed years ago by the late lamented John Nash McCullaugh, whose recent untimely passing has been duly chronicled, there always exists a ready-made market for hosiery, and it usually is neglected by primary interests, so far as relates to permanency of profitableness, until it becomes precarious. In which respect it bears no parallel to other divisions of the knit goods industry, being less a seasonally dominated item.

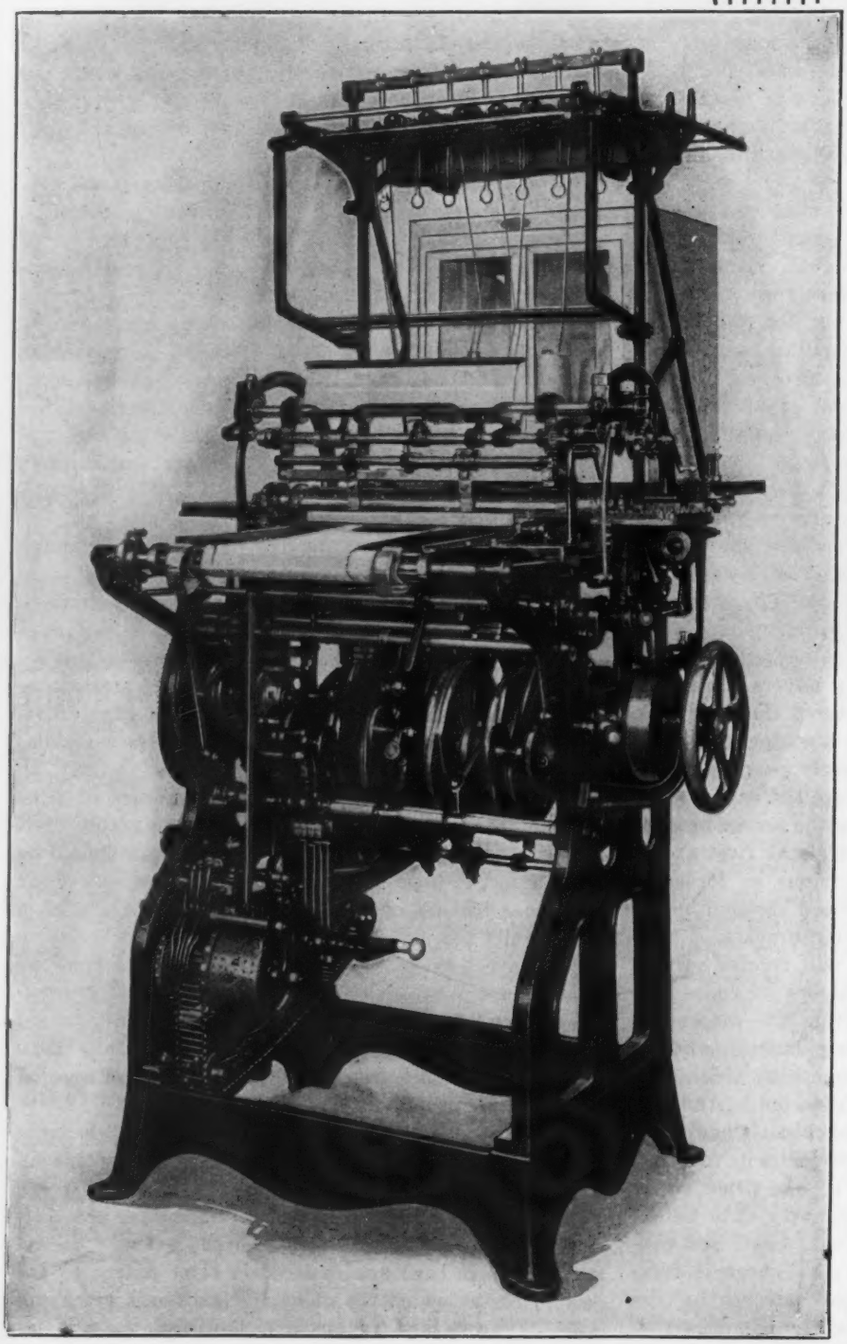
There are relatively fewer manufacturers of winter weight underwear than of any comparable division of hosiery, and their markets therefore should be less subject to internal dislocation. Yet the underwear trade has had no less difficulty in concentrating on a universally accepted code practice, and prices for some types have been subject to severe pressure from the same cause that hosiery values are depressed—overproduction inopportunely. This was true recently of women's knitted light weights and is especially indicated in reference to rayons in the entire range of underwear and lingerie.

Lightweights fluctuate in demand with style innovations, as emphasized in quite recent incidents in retailing. Sales of women's cottons were increased this year as a result of styling. Combatting this factor in sales expansion are cut-throat prices for rayons, which in turn are menaced in some extent by the low prices at which the glove silk garments are available. Cottons and rayons are, however, the popular

A further improvement!

Watch this space next month,
or write
for details

★ ★ ★



WILDMAN
THE WORLD'S STANDARD

The
WILDMAN
SINGLE HEAD
Full-Fashioned
Hosiery
Machine

Literature on Request
WILDMAN MFG. CO.
Full-Fashioned Division
NORRISTOWN
PA.

★ ★ ★

price items in women's underthings, and rayons are promising of an increasingly large sale for summer and fall, although admittedly less desirable for summer, especially, than are the cotton garments.

Business in the primary markets in June was unsatisfactory as to all classes of lightweight underwear, and there still was considerable of code revision. Manufacturers, generally, are understood to be prepared with built-up stocks for July and August shipments, and unless cotton yarns take a surprisingly downward turn, there should be little of a disturbing nature in coming market developments for mills in the heavyweight field.

What will be the ultimate effect of the recent NRA administration decision by which circular knit rayon fabric manufacturers will operate under the underwear industry fair trade competition code remains to be revealed.

The knitted outerwear manufacturers had a fairly satisfactory business in the first half of 1934, taking a reasonable volume of bathing suit business at, usually, profitable prices, despite some price competition until halted by a six weeks tie-up of bathing suit production activity in Philadelphia by reason of strikes. The second half of the year should prove equally satisfactory for mills well to the front with attractively priced models in sweaters. This business may be late in developing, in view of price weakness in worsted yarns and a tendency to defer commitments so long as possible pending the outcome of some disturbing economic movements.

It seems not unlikely that, instead of being spread over the usual six months, primary market trading in sweaters may be crowded into not more than four months. Pending a settling in the markets for worsted yarns there continues a fair amount of production of cotton sweaters, which, however, are believed to be subordinated in some extent to polo shirts, knitted of cotton, and formerly a worsted knit garment.

It is interesting, in a survey of the markets for knitted goods, in the three major divisions, to note the uniform fluctuations in the prices for the four textile fibers—cotton, wool, silk and rayon—from 1928 to near the end of the first half of 1934. All with the exception of wool have declined from the last half of 1933, silk registering the sharper drop and, some factors reason, likely to move upward in greater ratio as the markets for fabrics become more nearly settled.

Chattanooga Textile Group Holds Enjoyable Golf Tournament and Outing; George Smith Wins Bob Smith Trophy

A part of the crowd at Chattanooga suspended eating operations at the banquet on Friday night to permit a photographer without enough light to make this picture. Pick out your friends . . . . . .

THE ninth annual spring golf tournament and outing of the Chattanooga Textile Group was held at the Chattanooga Golf and Country Club, in Chattanooga, Tenn., on Thursday and Friday, May 24 and 25. This outing combined the Chattanooga Yarn Association and the Chattanooga Textile Association, and the Bob Smith Trophy was offered in the golf tournament, being won this year by George Smith. A large attendance of members, and knitting mill men and other guests, participated in the festivities, which began with the first 18 holes of the golf tournament on Thursday afternoon. The concluding 18 holes were played on Friday afternoon, and the banquet was held on Friday evening, during which a number of handsome prizes, donated by association members, and others, were presented. The handicap method of scoring was used in the tournament. Following is a list of the prize winners, giving the net score in each case, together with the prize and the donor:

1. George Johnson, 125, Yarn Men's Supply Trophy; silver goblets and pitcher, by Van Stratten & Havey.
2. George Smith, 127, Bob Smith Trophy; silver cocktail cups, by Oscar Heineman Corp.
3. D. O. Blevins, 128, cocktail shaker, tray and glasses, by Central Franklin Process Co.
4. Harry Hood, 130, cocktail tray and glasses, by Paramount Textile Machinery Co.
5. Guy Henley, 131, golf club, by Fidelity Machine Co.
6. J. P. Rickman, 131, Bobby Jones irons, by Ingram Mfg. Co.
7. H. O. Ingram, 136, silver liquer goblets, by Standard-Coosa-Thacher Co.
8. Stanley McInnes, 136, traveling kit, by Industrial Rayon Corp.
9. Clyde Wilkins, 138, silver compotes, by Duplan Silk Corp.
10. French Campbell, jr., 138, radio, by Tom Moore.
11. Garrett Johnson, 138, traveling bag, by Textiles, Inc.
12. Gene Shea, 138, golf clubs, by Tubize-Chatillon Corp.
13. Ernest Jones, 138, golf balls, by COTTON.
14. Adolph Scholler, 139, silver bowl, by Smith-Drum Co.
15. Frank Dudley, 139, candlestick, by Abe-foyle Mfg. Co.
16. George Ellis, Jr., 139, golf bag, by Scott & Williams, Inc.
17. John Lovell, 139, golf clubs, by Avondale Mills.
18. Burton Frierson, 140, traveling bag, by Quaker City Chemical Co.
19. W. S. Lawson, 140, golf equipment, by Dixie Mercerizing Co.
20. Guy King, 141, cocktail shaker, by Hemphill Co.
21. Dudley Bryan, 141, silver tray, by Buffalo Electro-Chemical Co.
22. Charlie Hall, 141, cocktail set, by John Lovell.
23. George Porges, 142, silver platter, by Laconia Needle Co.
24. Walter Thompson, 142, ash stand, by Kaumagraph Co.

Most any overseer or superintendent can run the job when everything goes smoothly, but it takes a depression or some other tragedy, often, to bring out a good man.

* * *

Why envy successful men? *Be* one.—From OLD-TIMER'S Sayings.

MERCERIZED YARNS

on

Cones, Tubes, Cops or Skeins

for the Knitting Trade

BOGER & CRAWFORD

PHILADELPHIA

B&C

Charles F. Havey discusses various phases of

The Raw Silk Situation

Many believe higher silk prices will precede active trading, with perhaps a slight recession meanwhile . . . . . .

RAW SILK is destined to command higher than present low prices before active trading in American silk goods for fall has assumed any great proportions. This is, in effect, the opinion of some of the more important throwsters and importers of silk from Japan. Such predictions, however, are usually accompanied by an admission that prices may be fractionally lower before any substantial rise takes place.

After all, as expressed by Charles F. Havey, of Van Straaten and Havey, it is anyone's guess; but, said Mr. Havey, "I cannot conceive of anything to push prices of raw silk lower unless there be further legislation on the subject of inflation of our money." This assumes, Mr. Havey added, "that by the time we are engaged actively in manufacturing goods for fall and winter retailing, labor elements which, at this time, appear to be considerably disturbed, will have disposed of their difficulties."

At the time Mr. Havey, at the office of his firm's plant in Philadelphia, was discussing the silk output as it appeared to him, 78 per cent seriplane was quoted on the open market in New York at around $1.21 to $1.22 per pound, and the American dollar was buying yen on a basis of 30⅛ cents, comparing with 20 cents a year and a half ago.

Mr. Havey went on to say that for four years he has been bearish on silk, but that he is less bearish at this time. In modifying his opinion, he may have been influenced by the unexpected relatively large consumption of silk by American mills in May, and the further fact that, since then, notwithstanding business in broad silk and hosiery tram has been somewhat unsettled, the Van Straaten & Havey plant has been operating at about 70 to 75 per cent of eapacity.

The Japanese are Studying the Problem

Mr. Havey's partner is in Japan, in conformity with a custom of the firm to have one of its members visit the country of the Mikado each year. The firm since 1927 has maintained a laboratory in Japan, being deeply interested in research work and experimentation for the further improvement in silk and especially in adapting it to the knitting of even better silk stockings. In this work, Mr. Havey states, this firm is co-operating with and has the co-operation of Japanese interests, who are as keenly alive to the importance of producing as nearly as possible 100 per cent satisfactory silk for hosiery.

Commenting on the sincerity of the Japanese in efforts to produce better silk, Mr. Havey referred to one of the largest filatures in Japan which is operating a full-fashioned hosiery machine solely with a view to checking up every change in the characteristics of silk as it comes from the reelers and, in this way, arriving at a more thorough knowledge of what the manufacturers of standard types of silk hosiery require.

"Our American manufacturers who blame defects in silk to indifference or ignorance on the part of Japanese producers would soon change their minds if they were familiar with what is being done by the combined silk interests toward establishing a greater degree of evenness," Mr. Havey stated. "I have never yet seen 100 per cent even silk," he added.

A Silk Man's Opinion as to Ringless

Asked as to his opinion of the practicability of inventions such as the three-thread carrier for producing as nearly as possible perfect hosiery from possibly imperfect silk, Mr. Havey said he thought that the manufacturers promoting the inventions of this character are engaged in a very important work, the results from which are being seen in stockings of a more nearly even surface. It was thought the better grades of silk should be used in chiffon hosiery, while possibly a somewhat lower grade may be adapted to seven or eight thread and heavier.

It is recalled in the trade and referred to by Mr. Havey that when first the improvement for eliminating shadows and rings from hosiery due to unevenness of silk was introduced, some manufacturers seemed to assume that even the lower grades of silk were made available by the use of the invention, and this served to retard the popularity since obtained by the "ringless" stocking. In view of the fluctuations in raw silk values which obviously cannot be charged to American agencies, Mr. Havey is not enthusiastic over proposals for undertaking to maintain fixed prices for American products of silk.

Referring to the prolonged declining market for raw silk and current low prices, it is believed among throwsters and some of the importers that by the end of July leading manufacturers will have picked off this year's bargains in raw silk. In other words, the more important consumers are expected to do considerable buying in the early days of a rising market, smaller concerns trailing along, as is not uncommon, until prices have attained a level more in keeping with the intrinsic value of silk. The more prevalent this idea becomes, the sooner will buying start and, obviously, signalize the beginning of a stronger market. It is pointed out in this connection that as the tendency in the retail trade is to follow an opinion that women will be likely to resist increasing prices in the fall, manufacturers probably will aim to cover for their prospective requirements in advance of any material increase in the cost of silk in the recent past.

Cause and Effect

In full-fashioned stockings, the best products and the best profits are made with the best needles.

That we are America's largest producers of Spring-Beard Needles and that nearly all manufacturers of fine quality silk stockings are standardized on Royersford Needles is a tribute to profitable performance.

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America's Largest Makers of Spring-Beard Needles
Main Office and Works—Royersford, Penna.

Southern Offices: Provident Bldg., Chattanooga, Tenn.

Louis Hirsch Textile Machines, Inc., Special Rep.

The prescription for better knitting

ROYERSFORD NEEDLES

An Analysis of Industry Attitude on Current Problems of the Code

WEBSTER defines "Code" as "a body of specified laws or regulations; a system of signals." Probably the term "Code" never was so much abused as it has been since the start of an undertaking to regulate all businesses under a code which, it is presumed by the NRA administration, shall be formulated for specific industries by those engaged in these industries, the results of their labors to have the approval of the NRA administration before it becomes fully effective.

With the completion of the first year of code regulation of business under the NRA there obviously is deeper interest in the future of this institution. Whether its past has been satisfactory is a matter of individual opinion. From interviews with representative manufacturers of hosiery for a composite opinion, it seems that in some respects the hosiery code has been probably 75 per cent satisfactory, while in other respects more than 75 per cent unsatisfactory. Dr. George W. Taylor of the Research Department of the University of Pennsylvania, who is widely known as an impartial chairman in labor disputes in the hosiery industry, said in a public address more than a month ago that price fixing and price maintenance were virtually an impossibility and that the code, if going no further than to provide means for regulating approximate hours of labor and wages, will accomplish all that should have been expected of it at the start.

One difficulty experienced with the enforceability of most of the codes applying to the textile industry is the fact that modification is frequent, while delay in making revisions effective is common. The code of the hosiery industry in particular has been pretty hard to follow, more especially in its application to minimum price and imposition of penalties for violating the price provision. In fact, it hardly could be successfully contradicted that respect for the code diminished as prices for given types of hosiery declined rapidly after a minimum price had been established, reference being made in this connection to $5.75 per dozen for standard construction 42-gauge 4-thread silk stockings and 7-thread silk of the same gauge.

It seems to have not been foreseen by the framers of this provision of the hosiery Code that failure to make it air-tight in effectiveness would prove disturbing to the industry. That it did, was clearly shown during the second week of June when buyers of hosiery for some of the large retail stores submitted cancellations of orders, presumably on instructions from their superiors. Even before that time the $5.75 per dozen stocking of the afternoon of April 23 were being quoted $4.75 per dozen. An official statement from Washington left an impression in the minds of not only retail distributors, but, as well, in the minds of some manufacturers, that attempts to maintain prices were about to be abandoned.

Following publication of a statement that orders were being cancelled under the assumption that price fixing would no longer be in effect, Executive Director Earl Constantine of the National Association of Hosiery Manufacturers said in reference to it, "Any pronouncement which may have been made recently by NRA with reference to price revision in codes, cannot and does not serve to nullify or remove any price provision in the code . . . Unless and until a Code is amended in orderly process, its present provisions remain in force."

Probably no representative of the hosiery industry is better qualified to interpret the industry's code than is Mr. Constantine. The fact remains that while, through the month of June, he regarded the price provisions in force, it was a common admission that this provision was being openly violated six days a week, and it is not denied that these violations were contributory to a postponement of dealers' commitments, this implying no criticism of those responsible for the promulgation of the code or any of its provisions.

It has been pointed out by Mr. Constantine that the Hosiery Code Authority in setting a "lowest reasonable cost", permitted sales at prices below what some regarded reasonable cost, so long as a mill could demonstrate that its costs were actually below the cost set. This is held by some as an admission that a universal "lowest cost" can be set down as among impossibilities; but, it was pointed out, under a newly approved amendment, it will be possible for the administration not only to determine what shall be regarded as the lowest reasonable cost during an emergency, but to prohibit any sales below that figure. This possibility is taken care of in an amendment to the Code which reads:

> "When the Code Authority determines that an emergency exists in this industry and that the cause thereof is destructive price-cutting such as to render ineffective or seriously endanger the maintenance of the provisions of this Code, the Code Authority may cause to be determined the lowest reasonable cost of the products of this industry, such determination to be subject to such notice and hearing as the Administrator may require. The Administrator may approve, disapprove, or modify the determination. Thereafter, during the period of the emergency, it will be an unfair trade practice for any member of the industry to sell or offer to sell any products of the industry, for which the lowest reasonable cost has been determined, at such prices or upon such terms or conditions of sale that the buyer will pay less therefor than the lowest reasonable cost of such products.
>
> "When it appears that conditions have changed, the Code Authority, upon its own initiative or upon the request of any interested party, shall cause the determination to be reviewed."

(Continued on page 103.)

Opinions on Knitting Full-Fashioned to Finish a Certain Number of Courses

EDITOR COTTON:

One of your readers, "CONTRIBUTOR NO. 6322", brings up in the June issue, the question as to the relative difference in the courses per inch in gray fabric and finished fabric of full-fashioned hose, but wants to know whether it is practicable to knit the same number of courses that the stocking should finish.

Our reaction to the question is that a finished stocking ought to represent a satisfactory standard to the individual manufacturer, whether right or wrong. It is also our impression that no manufacturer will ever make a standard finish which will meet the approval of all of his customers. So the burden of responsibility on the individual manufacturer is to try to arrive at a finish that is, first, satisfactory to himself, and which will meet the approval of sufficient buyers to keep his plant satisfactorily employed.

With these introductory remarks, I would say that primarily the finish of a stocking has to do with the condition of the silk cone before the knitting begins. My thought is that cones should be as softly wound as possible to be safely handled, and that silk should be delivered to the needle under as little tension as possible. This condition of knitting permits a freedom of action of the fibers in forming the stitches and comes nearer producing a stitch that will carry through to the finishing process in a satisfactory way. Such stitch construction, if properly designed and finished, will carry through to the finish reasonably the same number of courses per inch in the finished as in the gray.

It is assumed that the inquirer's question has been based on raw silk. It is known that raw silk carries anywhere from 22/27 per cent boil-off. Naturally this loss in boiling off reduces the diameter of the silk and is bound to cause some variation between the gray goods and the finished. Answering the inquirer's question specifically, I would say that the preferable procedure is to knit 54 courses per inch on the machine and expect the goods to finish 50/51 courses per inch.

The matter of courses per inch in the finish will depend on and be determined to a considerable extent by the kind of a form used in finishing. If a form is narrow and the stocking is stretched on the board there will naturally follow appreciable elongation of stitches or loops and a much wider variation than three to four courses per inch will develop between the gray goods and the finished. If forms are wide, the tendency will be for the loops to be drawn into a horizontal position rather than vertical, and the variation between the gray and finished will be less.

My opinion is that goods should be knit to fit the form so that no stretch other than the amount necessary to smooth the goods out on the form will be used. In other words, we believe that where a stocking is properly knit, the least distortion possible of the stitch construction produces the best finish.

We recognize the fact and practice that many manufacturers produce loosely knitted fabric and fill the goods with sizing compounds of various kinds in the finish to hold distorted stitches in such shape as to produce a fairly satisfactory finish and to give an appearance of better knitting than actually exists. We also know that goods are knitted loose and short and stretched to a desired length on the board as a matter of producing cheap hosiery.

My reply to the inquirer's question has been based on the assumption that he is interested in making standard merchandise and finishing it in a practical way. He will undoubtedly understand that my answer has been based on averages rather than variables, and knows that where goods are kept in the dyeing and finishing bath one and one-half to two

WE invite our readers to make use of this department for the discussion of any and all problems arising in connection with the knitting mill from the office to the packing and shipping departments. Questions, answers or letters need not conform to any particular style and will be properly edited before publishing. All questions will be answered as promptly as possible. The names and addresses of the contributors must be given, but will be held in confidence and a pen name substituted when printed. All acceptable contributions other than questions will be paid for after publication. The editors do not hold themselves responsible for any statement of opinion or fact which may appear in this department unless so endorsed. This department is open to all.

◆ ◆

Made today's way

Machinery is behind the speed and accuracy of today's manufacture . . . the kind of swift, smooth machinery that turns out Torrington needles.

And machinery makes most *modern* things. Even our writing tools have progressed to being machine-made. Primitives used the stylus . . . a crude, hand-hewn object that wrote simple messages for them. But now we write with intricate, fast, *accurate* little machines . . . typewriters, for example.

It's this modern, mechanical, *precision* manufacture that keeps Torrington needles at the top of the list. Torringtons are made by machines.

A STYLUS . . .

A TYPEWRITER

AND A TORRINGTON NEEDLE

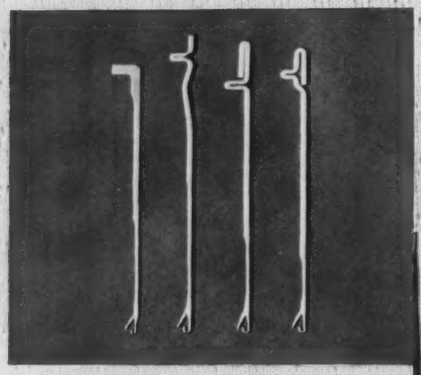
TORRINGTON *SPRING BEARD* **NEEDLES**

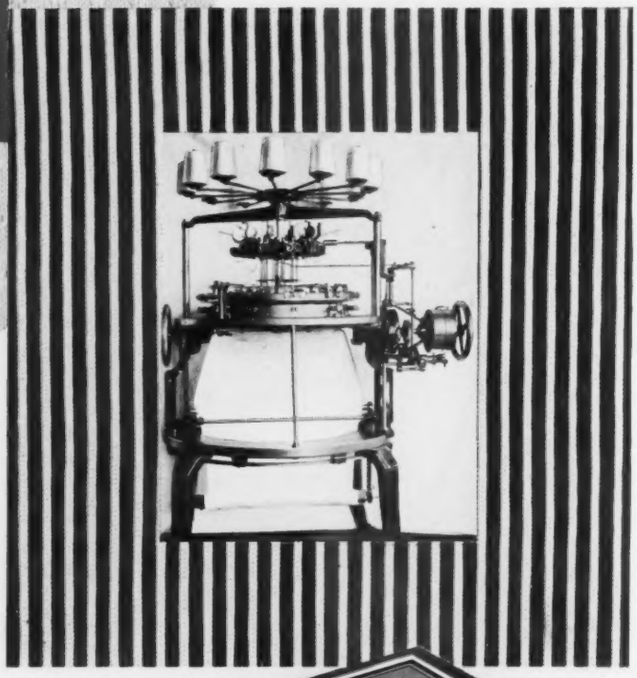
Fine fabrics

The quality of the *fabric* is mighty important to a knitter . . . and it's important to the man who makes the knitting machine, too. So often has this been proven in sales, that nowadays the canny ones watch for every opportunity to *improve the fabric.*

Using the best needles is one way. And more every day are finding that Torringtons give them the smooth, well-nigh perfect production they want.

Here's one example . . . a machine made by Wildman. Its builders "use Torringtons". And with Torringtons, it produces these interesting, fine fabrics.





In the knitting of these fine fabrics, 3 good names played a part: Raynit Mills, Wildman Machines, and Torrington Needles.

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TORRINGTON *Latch* NEEDLES

hours at or around a boil that they will finish entirely different than if they had been boiled three-quarters of an hour to one hour, which is the usual average time required. In other words, it is a well known fact that silk fabric will shrink and harden if kept in the dye bath too long, and cannot be finished in the same way that goods of normal time in the bath can be finished.

CONTRIBUTOR No. 6325.

EDITOR COTTON:

In answer to the question submitted by "CONTRIBUTOR No. 6322", with reference to the relative difference in the courses per inch in gray fabric and finished in the same way that goods of normal time in with so many sides and angles to it that no brief answer could be correct. The nearest I could approach the answer would be as follows:

Let the dyehouse develop a formula for dyeing and finishing a given stocking best adapted to the requirements of said stocking. When the stocking is properly boarded, count the courses and if the courses do not count the desired number, then adjust the knitting up or down as required.

There is only one correct way to board a stocking, while there are many variations that may be used in knitting or finishing it that will affect the boarding.

If a stocking is knit properly and dyed and finished correctly, the boarder can pull it on the board and place it in position on the board with easy, gentle pulls which will not distort the stitches or mar the texture of the fabric. To give a stocking an excessive pull or leave it loose on the board in order to try to effect a certain number of courses per inch is very poor practice.

Now, to say how many courses a stocking should be knit to produce a certain number in the finished product depends entirely on local conditions, such as how many needles in the head, how many narrowings, the type of throwing used, whether the nature of the silk is hard or soft, the boil-off content of the silk, whether the silk is run dry direct from the cone or is previously conditioned or backwound, the construction of the fabric, the relation of the size of the silk to the gauge of the machine, the amount of tension on the ware roller take-up, the type and width of the form on which the stocking is boarded, and several other conditions which affect the relative difference in the gray and finished fabric, which variation amounts to from 1 to 4 courses per inch.

Before I could answer all these questions—in fact, while I am writing a list of them, my knitting room foreman could knit a sample and get it through the dyehouse just to see how much he missed his guess and begin making the necessary corrections.

This all leads up to the self evident fact of the need of standardization in every process of manufacturing. You can't use silk from one throwster one day and from another the next, and use a certain type of finish in the dyehouse on one bath and another on the next, and produce satisfactory uniform results.

To come back more specifically to the question, if the fabric is knit on a full needle bar of standard construction and the courses are counted at the wide part of the leg just after turning the welt, and the stocking is properly finished and boarded on a form of standard width, the courses in the finished product should run about one course less than what they count on the knitting machine at this point of the stocking. Naturally, if the stocking is boarded narrower than it is knit, the courses will count less, and if it is boarded wider than knit the courses will count more. The normal let-out in degumming fabric knit with 23 per cent boil-off silk will be about two courses per inch.

In summing up, I would say that the best practice is to use hosiery forms that conform nearest to the adopted standard dimensions and then knit the stocking to fit the form and then finish the stocking in a way that will facilitate the movement of the fabric on the form and then board the stocking without stress or strain in a normal easy manner, so that it is neither left loose on the board nor pulled too tight. Fabric left thus in a natural normal condition will retain the shape and finish much longer than could be expected with less ideal conditions.

CONTRIBUTOR No. 6323.

Knitting Code Comments

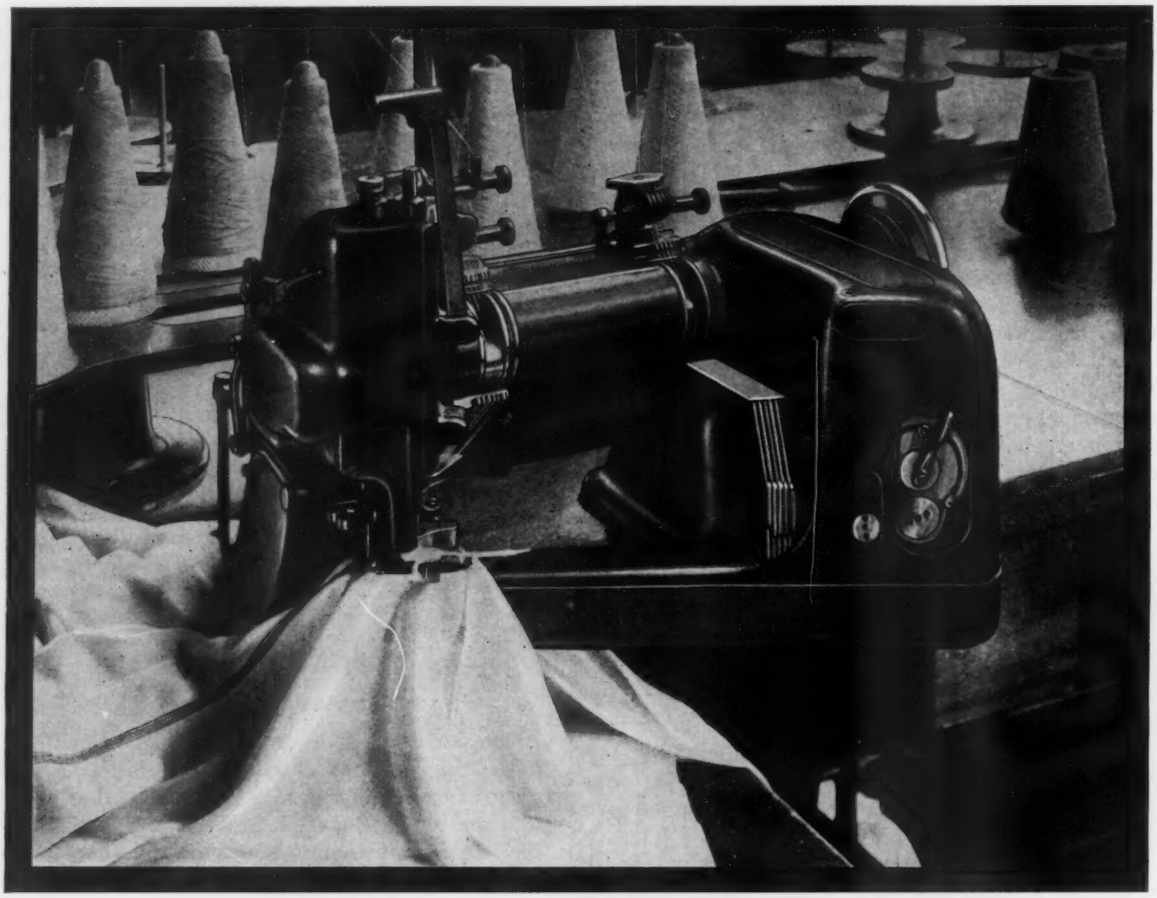
(Continued from page 99.)

The Hosiery Code Authority had scheduled for its meeting on June 20 consideration of the advisability of exercising at this time the authority given to it under the Code. It is apparent that from the time when first announcement of the June 20 meeting appeared to the outcome of that meeting, there were reasons for assuming that some elements in the trade might be disposed to speculate on the effect of whatever action the code authority might take on the question of declaring the existence of an emergency and its possible duration. Thus it is not hard to understand why the hosiery industry may be, as frequently described recently, "in a state of demoralization", for which numbers of manufacturers suggest one remedy—regulation of output to be determined by truthful reports of manufacturers each month to the code authority, as to the production, shipments, and hosiery in stock in their mills.

At the last of June, the Hosiery Code Authority announced approval of recommendations on production control calling for: "1. A shut-down of two weeks during the period of July 1st to September 1st, 1934, each plant to select the two weeks it prefers. Such weeks to be consecutive or not, as the plant may choose. 2. A reduction of the length of shifts of productive operations from 40 to 35 hours, effective July 16, 1934, including full fashioned footing equipment operated on a two-shift basis. 3. An increase of those minimum wages provided for in the code which have proven to be materially below prevailing actual earnings, and, therefore, ineffective, to an extent which will substantially protect the overwhelming majority of the mills from unfair competition resulting from the few mills whose wage rates approximate the minimum wages."

THE WORLD'S FINEST SEWING MACHINES

1859—75 YEARS OF SEWING PROGRESS—1934



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Helpful Hints on Standard Knitting Machine Fixing

(Editor's Note—This is the third in a series of articles discussing the parts of Standard knitting machines and giving helpful, practical suggestions on fixing them. The first article appeared on page 129 of the April issue and gave a history of these machines. The second article, on page 127 of the May issue, covered the parts shown on Plate I in the Standard catalog.

The numbers in parentheses following the names of parts are the numbers used by the machine manufacturers for the various parts. It is suggested that the reader refer to the plates in question in the Standard catalog in reading these discussions, and that he clip these articles and file them in the catalog with the various plates for further reference.)

EDITOR COTTON:

Plate 2—Standard

The model H Standard machines are well adapted to producing two types of plain goods, namely topped and transferred numbers such as half-hose, children's ribbed top socks and anklets; and string work such as ladies' or children's hose which are to be hemmed. Misses' and children's anklets on which various tops are *sewn* can also be included in the latter class. One of the many reasons for using Standard machines to knit the different types of goods mentioned is that they will run successfully at high speeds and thus help to lower production costs.

All machines being used to produce string work should be equipped with the swing piece hold-down device shown at the top of the plate. This device consists of four simple parts, the spring (K-743), the catch (K-741), the pivot pin (K-1339), and the stop pin (K-835). When the swing piece equipped with this device is lowered the catch will automatically lock it down and the swing piece cannot be raised without first tripping the catch. The purpose of this simple device is to prevent needle breakage and other damage to machine parts which can be caused by the swing piece flying up while the machine is in motion.

The Yarn Clamp and Cutter

One of the greatest weaknesses with many machine fixers is that they pay too little attention to yarn clamp and cutter troubles. I do not mean to imply that they wilfully neglect this important device, but in many cases, they do not get to the bottom of clamp and cutter troubles and really *do something* to eliminate them. There are no halfway measures with clamp and cutter adjustments. They are either right or wrong, and by going over and carefully examining a day's waste and seconds, the fixer can get a good idea of how wrong they may be.

Very often the knitter is blamed for not keeping loose ends cleaned out from under the yarn clamps when in reality the machine is to blame. Frequently yarn clamps are so badly plugged with an accumulation of loose threads that it is utterly impossible for them to properly hold any of the yarns that go under them. It is part of the knitter's job to keep loose threads cleaned out from under the yarn clamps, but it is also up to the fixer to keep his machines adjusted so that the clamps and cutters do not become clogged up four or five times a day. An excessive accumulation of threads around the clamp and cutters is a sure sign of trouble. Any fixer can find it by simply checking over his machines. The important point is, does he *correct* these troubles when he finds them or does he wait for a half dozen complaints from the knitter before he finally takes some definite action?

The heavier counts of yarn such as heel and toe and leg yarns should give little trouble about getting them to go under the clamps and into the cutters because of their size and the amount of tension usually run on these yarns. The greatest offenders along this line are the fine count cotton backing or double sole yarns such as 100s/1 or fine rayon such as 50 and 75 denier. Most of these fine yarns are run without tension and consequently they are more difficult to control than heavy yarns.

Clamp and cutter troubles will vary according to machine diameters and gauges. They are not difficult to overcome on large diameters such as 3½-inch machines commonly used for making half-hose, where as a rule heavier counts of yarn are used. On small diameter machines such as 2-inch or 2¼-inch, usually used for small size infants' goods, clamp and cutter troubles are more frequent and more difficult to overcome especially on fine gauge machines where extremely fine counts of yarn are used.

Adjustment of Clamp and Cutter

The correct height of the clamp and cutter assembly in relation to the cylinder and yarn fingers must be kept in mind when making adjustments. Very often in changing styles it will be found necessary to raise or lower the clamp and cutter assembly in order to overcome trouble of one kind or another. Most of the clamp and cutter troubles as well as other ailments which show up when styles are changed can be traced to the different styles not being properly balanced as to weight. For example, say the mill must give the customer a pure silk half-hose with mercerized heel, toe and sole splicing, a rayon plaited number with mercerized heel, toe, and splice, and an all-mercerized number. In order to balance these three numbers as far as knitting is concerned the silk number should be made of 16-thread for the leg and foot, two ends of 60s/2 for the heel and toe and 70s/1 splice. The rayon plaited number should be made of 150 denier over 70s/1 for the leg and foot, one end of 30s/2 for the heel and toe, same splice as the silk number. The all-mercerized number should have 50s/2 for the leg and foot, the same splice and heel and toe yarns as the plaited number. The mercerized number would be a little on the light side, figuring about 210 denier against 225 denier for the plaited, and 224 denier for the silk number. When the construction in these styles as just mentioned is out of balance the fixer can expect and will have sizing trouble, cutting holes in yarn changer, streaky fabric, etc., when he changes from one style to another, most of the trouble being caused by running the needle cylinder at three different heights.

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The most simple way to lower the clamp and cutter assembly is to file off the under side of the bracket (K-282) where it rests on the swing piece, or shim it with thin washers if it is necessary to raise it. The plate should be located centrally in the needle circle and be raised high enough to prevent the nose of the sinkers from striking the under side of the plate. It is difficult to get the knitted fabric to work its way down into the cylinder on small diameter machines unless weights are used, and these bring on additional troubles in making certain types of goods.

If the plate is kept at a reasonable height above the sinkers, there will be sufficient space underneath it to accommodate small size hose without injury to the fabric as they become wadded up during the process of knitting. Raising the clamp and cutter assembly too high will decrease its yarn changing efficiency for the yarn fingers raise only to a certain height and the higher the assembly is set the less benefit will be derived from the finger lift.

The clamp and cutter operating lever (K-410) is provided with a simple adjusting screw (K-1010) which rests on the raising pin (K-5770). By taking full advantage of this adjustment the movable clamp (K-1145) can be raised high enough to allow the yarn to pass under it freely and enter the cutting blades. Two types of auxiliary yarn clamps are used, one shown on the bottom of Plate 2 and the other (K-1140) shown on Plate 24. We have tried both types of auxiliary yarn clamps and find that the (K-1140) gives best results, at least a very careful test showed very favorably for it. Make sure that the small leather pad which is embedded in the plate does not protrude above the upper surface of the plate. Don't expect the movable yarn clamp (K-1145) to give results without having the leather pad to rest on. Keep the pad fastened down tight to the plate. See that the under side of the movable clamp is smooth so that the fine counts of yarn will slide under it freely without hanging. Have the outer end of the spring clamp (K-1140) bent upward sufficiently so that all yarns will surely pass *under* it during changes while the movable clamp is up and not *over* it, which is frequently the case. Excessive tension on the clamp spring (K-833) will not only injure the leather pad under the clamp but will also put unnecessary strain on the clamp and cutter operating parts.

The Cutter Blades

Standard cutter blades (K-1142) lower and (K-1143) upper, require less attention than similar parts on any other circular machine. Occasionally the tension spring (K-1144) will break. In replacing it make sure that the pointed end of the spring presses against the upper blade so as to hold it firmly against the lower blade. Unless the blades cut clean each time they soon will be clogged with loose threads and give trouble. One very desirable feature of the Standard clamp and cutter arrangement is that a standardized set of cams, one of which is attached to each yarn change block, is used to operate it. Thus, in making pattern changes which require re-location of yarn changes, it is only necessary for the fixer to put the yarn change block in position. He does not spend a whole day with a file in one hand and a hack saw in the other, fitting up yarn cut-off cams.

Plate 2-A

Several improvements have been added to the original clamp and cutter parts. These are shown on Plate 2-A. One useful and effective addition is the hold-down plate (K-3807) which is used for small diameter machines and (K-3845) for large diameters. The purpose of this plate is to help keep the knitted fabric down under the clamp and cutter plate and prevent it from working up between the outer edge of this plate and the sinkers. Fabric creeping up usually begins during the heel and toe knitting while the heel and toe pockets are being formed, and serious damage to needles and other parts may result if the fabric should get caught on the clamp and cutter plate.

The hold-down plates are also useful in preventing the double sole threads from becoming knotted up, thus making it possible to machine-trim the double sole more readily when the threads lie uniformly in the goods. The leather block (K-1931) has also been added to the movable clamp (K-1145) to provide additional yarn holding area.

In closing my remarks in connection with clamp and cutter parts, I would call attention to the fact that there is a possibility of making seconds, thirds or waste at every yarn change. Much can be accomplished toward keeping these every-day troubles at a minimum if the clamp and cutter adjustments are watched carefully.

Plate 3

The assembled yarn change slide bracket shown on Plate 3 is to my mind one of the most interesting units of the whole machine. It is held rigidly to the head of the machine with three large screws (K-816), and two dowel pins (K-805) which are placed in the bed at the factory, keep the bracket in perfect condition. This simple yet positive manner of fastening the bracket makes it possible to remove and replace the complete unit in a few minutes' time when the necessity arises and there are no ifs or buts in getting the unit back in its original position. Standard machines are noted for this valuable feature, or as a fixer puts it, you can take a Standard apart in big chunks, and it's easy to get it together and in running order without much fuss.

The component parts of the slide bracket need very little attention once they are properly assembled and the few adjustments which must be used under normal conditions are so located that they can be utilized without dismantling the bracket.

The lever (K-412) is used to move the latch ring forward to assure proper engagement of the leg yarns when knitting begins on transferred numbers. It is operated by the rod (K-5920) and is provided with an adjusting screw (K-829).

Many machine fixers fail to give the double sole finger operating lever (K-1067) a little much-needed

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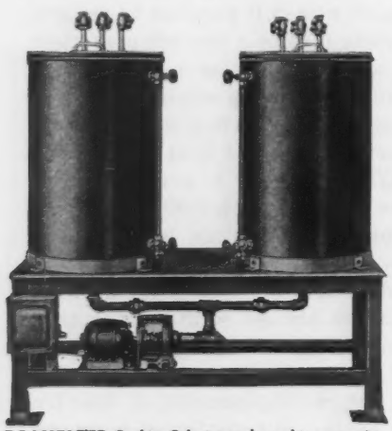

ROCHESTER Soaking Solution tanks used in connection with Rochester Silk Impregnator Unit. The tanks are of Monel Metal as are also the water, steam and air pipes. This unit completely equipped with motor driven pump for pumping solution to impregnator spray head. Manufactured by Rochester Engineering and Centrifugal Corporation, Rochester, New York.

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attention and consequently they have trouble controlling the double sole finger. The greatest offender along this line is what the boys usually call double sole scattering trouble. In most cases if it is not all bad it means seconds for the knitter and the mill. Much of this so-called scattering can be eliminated or at least reduced if the fixer will put a few drops of oil regularly on the screw (E-1671), stud (K-1027) and roll (K-1028). If the shoulder of the screw (E-1671) becomes worn or the hole in the lever (K-1067) becomes enlarged, causing it to hang on the bracket with a lot of side play (like a sheet fluttering in the wind), it will not operate satisfactorily. A dab of cup grease or vaseline on the upper end of the lever where it comes in contact with the heel of the double sole finger will help reduce friction and wear at this point. Now, some readers may say, why that's old stuff; we know it. Right, but the important part is what we know does not prevent trouble or fix machines; what really counts is *what we do.*

The Slides

When it comes to making yarn changes at high speeds you can bet your last dime on the Standard H machine. The necessary motion for raising and lowering the yarn changing fingers is supplied by the slides (K-1252-53-54-55-56) and the levers (K-408) and (K-418) which actuate the slides. The new No. 0 slide (K-1251) is especially designed to control the double sole finger, and is used in the place of the No. 1 (K-1252) slide. Free movement up and down, also back and forth, is necessary for efficient operation of the slides. Excessive oiling usually causes the slides to become sluggish due to deposits of hardened oil forming between them. There is but one way to cure this trouble and that is to remove all the slides and re-polish them on a buffer.

The action of the slides is very simple. The selection is made by the narrower projection on the lower end of the slide coming in contact with the different ridges on the yarn change blocks (Plate 12). Thus the slide is raised high enough so that the back prong on the upper part of the slide lines up with the actuating piece (K-415) which is part of the lever (K-418). The rod (K-961) being raised by the yarn change block moves the lever (K-418) and the actuating piece (K-415) causing the slide to be moved forward which throws the yarn change finger into action.

Throwing the yarn change finger out of action is accomplished by the front lever (K-408) coming in contact with the front prong on the slide and moving the slide backward. Excessive pressure on the rod (K-961) and pin (K-953) will break the connecting piece (K-130). A simple adjustment for both levers (K-418) and (K-408) is provided by the adjusting screws (K-939).

The springs (K-762) pull the respective levers back to their normal position after each change.

The rod (K-5973) which operates the front lever is provided with a compensating spring (K-990) and plunger (K-975). This simple yet effective arrangement makes possible a very close adjustment with-

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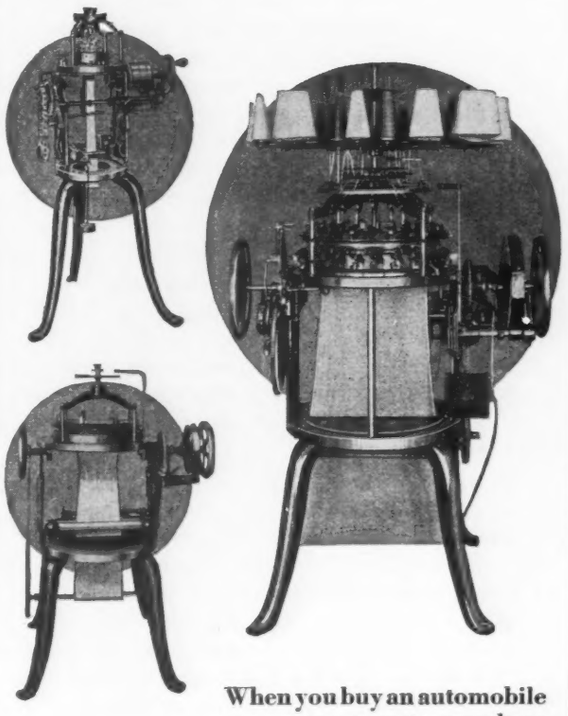

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out undue pressure on the rod (K-5973).

Should the plunger (K-975) become worn or broken it can be replaced at a very nominal cost due to the rod (K-5973) being made in two separate pieces. One thing that must be kept in mind when making adjustments with the lever adjusting screws (K-939) is not to set them too tight against the top of the rods. Merely enough adjustment to throw the slides fully forward or backward is necessary, with a slight bit of play when the rods are fully up on the top of the yarn change blocks.

Excessive pressure on the adjusting screws (K-939) will cause broken slides and damage or unnecessary wear to other parts of the yarn changing mechanism.

The screw (K-846) passes through the hole in the bottom of the slides and keeps them at the right level when they are down. It also acts as a pivoting point when the slides are moved backward. The guide plate (K-1139) keeps the lower end of the slides in alignment and prevents binding when the slides are raised by the yarn change blocks. Loose or broken guide plates will cause yarn change troubles.

The upper guide plate (K-744) keeps the upper end of the slides in alignment. It rarely gets out of order or gives trouble in any way. Each slide is supplied with a spring (K-1099). These serve a dual purpose of holding the slides down and pulling them back during the yarn changes. Slide springs will break at times like any other spring. They are easily replaced.

The yarn change slide bracket, and its various parts and adjustments, is far from being a complicated piece of mechanism. It should not cause the experienced fixer to lie awake nights wondering how he will get through the next day's grind. None of the parts of this unit is subject to excessive wear or breakage under normal conditions, and I doubt if it is possible to invent a device which would be more simple in design or construction or more positive in action than the Standard yarn change slide bracket.

The next article will cover Plate 4 and Plate 5.

MARTIN A. SHAW.

Time Studies on Full-Fashioned Production

EDITOR COTTON:

This is in answer to the inquiry of "CONTRIBUTOR No. 6301", page 95 March COTTON, with reference to a breakdown of the time required for various factors in producing a set of full-fashioned hosiery. To find out what the production is on various jobs, one must make time studies. These I make quite frequently, and in the following manner. I will use a legger as an example.

One must get an actual timing of one machine operated by only one person and not take into account any time for any stoppage of the machine for any purpose except changing operations. Stopping the machine for tying up cones, broken needles, or any other cause like that must not be included in the timing of the set for a time study. For what is desired is the actual time consumed in making a set, and then necessary allowances can be made afterward. There must be time allowances for personal reasons, for topping-on, tying up cones, needle breakages, etc. This is arrived at by taking a large number of knitters' experience, and timing them several days at a time. Once this time allowance is arrived at it can be taken as standard for all future time studies.

Time Study on two machines by "CONTRIBUTOR No. 6313". The machines are 24-section, 42-gauge leggers; 60 courses per minute high speed, leg and welt, 36 courses per minute slow speed, splicing and heel. Total course count 1,506. 46 narrowings. 7 picot dips. Total dozens per week, 51.

	Machine No. 1		Machine No. 2	
	Stop Time	Running Time	Stop Time	Running Time
Starting set	3.15		2.90	
Back of welt		2.90		2.90
Picot and stripe	.40		.35	
Front of welt		2.60		2.75
Stripe	.35		.30	
Turning welt	5.70		5.80	
Changing carrier	.30		.30	
Leg		15.90		16.10
Start of splicing	.50		.50	
Running splicing		3.05		3.10
Start of heel	.35		.40	
Running heel		2.40		2.65
Taking off set	2.90		2.25	
Total Running Time		26.85		27.50
Total Stop Time	13.65		12.80	
TOTAL Time	40.50		40.30	

I have found that about 15 per cent of a workweek is used up for these allowances on a 42-gauge legger, divided as follows: Personal, 6 per cent; 4 per cent for minor details; 5 per cent for breakage and press-offs. This percentage of allowance is deducted at first from the total hours employed in one week. As an example, a knitter working 40 hours, deduct 15 per cent for allowances which leaves 34 hours for actual knitting. Into this 34 hours divide the actual time taken to make 1 dozen, and this gives the amount of dozens a knitter should get per week. As an example, if it takes a legger 40 minutes for a 24-section legger to make 1 set without counting any unnecessary stops whatever, he should do 51 dozen per week. Now if you have a knitter that is above the average and has less press-offs, needle breakage, etc., and stays right on the job, naturally he will get more dozens. But this figure tells you what to expect from that operator.

Herewith is an outline of how I make my time studies. The figures used have been found to be an average of how long it takes my knitters to make the various changes and operations. You will note I have separate columns for running time and stop time. Running time is the time the machine is actually laying threads. Stopping time is the time the machine is not knitting but the operator is working, making various operations. The figures are in minutes and tenths of minutes; using this decimal makes figuring easier than by using minutes and seconds.

You will also note one machine runs slightly faster than another, and one operator is a little slower than another. I have done this to show how speed varies even though you think both machines are running the same. This reveals also to the knitter that the better care he takes of his machine the more production he eventually gets.

CONTRIBUTOR No. 6316.

THE KNIT GOODS MARKETS . .

AN unsettled condition in the market for women's silk full-fashioned hosiery is attributed by some operators to a dumping of the regularly knit preliminary to stocking up with what is described as a "ringless" type. It is observed by one of the more important mill managements that if the present inquiry for the "ringless" shall be translated into orders, demand by next fall will exceed the supply of types knitted on machines equipped with the three-thread carrier device.

Increased Demand for Ringless Seen . . .

While this may seem to some a rather far-fetched idea, there is some basis for anticipating a flood of inquiry for stockings absolutely free from shadows and other blemishes due to unevenness of silk. Some persons, perhaps carried away with enthusiasm, go so far as to say that the present type of regularly knit for popular price brackets, designed for low price promotion sales, will be the low-end hosiery of the future, once the "ringless" becomes generally entrenched.

Installation of the "ringless" device continues in a rather broad way, notwithstanding the number of these carriers installed during the earlier months of the year. In consequence, prices of hosiery of this construction are so moderate that there seems no doubt of very wide distribution; but the idea of maintaining prices at more than $1.00 per pair is not generally entertained in the trade, since the Wanamaker stores have had successful sales at 85 cents for very good numbers, and other stores have exploited what apparently were first quality at 69 cents. In this respect, the Textile Patents Corporation hardly will be able to achieve what originally was contemplated in the way of price regulation.

Some of the old-time hosiers view the introduction of the "ringless" stocking as the outstanding development since the drift from ingrain to dip-dyed. There have been many improvements and style innovations, such as the double block heel, the picot, the pointed heel, etc., but the "ringless" represents an application of fundamentals in construction. A very important advantage claimed for knitting with the three-carrier attachment is that it reduces the number of irregulars and, therefore, removes from the market accumulations which frequently have been dumped at prices calculated to disturb the markets as a whole. Eventually, as the "ringless" becomes more generally appreciated, it is thought, many consumers who object to some of the popular prices for current types of hosiery will become patrons of the higher price by way of expressing satisfaction with the improvement. It is maintained by some stylists and experts that the "ringless" should be knitted sheer to present an intensified chiffon effect, due to a more nearly uniform surface.

Some Facts about Hosiery Prices . .

Although, in theory, it still may be and probably is a violation of the code of the hosiery industry to sell hosiery below cost, some of the prices quoted last month (June) were low enough to indicate that while they may have represented at least the cost of production and preparation for the markets, it did appear that, in some instances, manufacturing costs either had been materially reduced or profits had been erased.

If, as stated by Mr. Constantine in his address to hosiery workers, the industry is "sick", the ailment can be charged to low prices. Since 42-gauge hosiery of 4-thread construction has been available at prices in a range $4.75 to $5.00, manufacturers of 39-gauge necessarily had to revise their schedule of prices, and a few weeks ago 39-gauge silk top plaited foot was quoted $3.75 per dozen in the gray, with a finishing cost of 65 to 75 cents. The common New York price for finishing is 65 cents per dozen.

Probably the lowest price displayed in a high type Philadelphia department store last month was 47 cents a pair for full-fashioned silk, every pair represented as perfect. This stocking was of chiffon weight, French heel and cradle foot construction. The store declared the price was less than seconds had been sold for only a short time previously. In fact, it has been quite common to advertise "first quality" at the represented price of seconds. This is one practice in retailing apparently not reached by any fair trade practice code, of which much has been heard lately.

It was noted in the latter part of May that some of the manufacturers of full-fashioned hosiery were specializing in offerings to be used in June promotions. For example, the Belding Hemingway Corticelli Company offered several branded numbers at $5.47½ to the retail trade. This offering made its appearance during the last week in May and embraced a "5-thread service chiffon" number, full-sized, all silk with plaited sole as an outstanding item. It will be observed that this was a 5-thread, priced 27½ cents per dozen under the price set by the hosiery code authority for 4-thread 42-gauge. The same company, at the same time, offered a service wear, lisle welt and foot, all silk leg, at $5.47½ per dozen, thread construction not mentioned, and it was noted by buyers to whom the several numbers were offered that in neither instance was there reference to gauge.

Individual Production Control is Visualized . . . . .

Confusion over conflicting interpretations of official and semi-official statements indicating that price fixing and price maintenance had been discarded as a means for stabilization of the prices for hosiery brought about a situation that was regarded little less deplorable than that which had been charged to price competition. One conclusion reached in the trade—it seemed to be rather general—was that an attempt to establish a minimum price at which hosiery might be sold had proved a failure.

It was inferred among buyers and manufacturers that the NRA administration was about to abandon efforts at establishing minimum prices at which hosiery might be sold without inviting the allegation of selling below cost. In this belief, buyers for some of the large retailing establishments notified their sources of supply that it was desired to cancel the unfilled part of orders and that the stores would be open for the placing of new orders within a week or ten days, which made it appear that new business substituting for the cancellations, was to be expected around the last week in June.

Buyers stated they had been advised by their superiors to request acceptance of cancellations, the trade assuming that the reason for this was a suspicion that with minimum price alleged to have been discarded, prices generally would undergo a downward revision. By that time, 42-gauge 4-thread full-fashioned stockings of silk standard construction were being purchased from either of a half dozen or more manufacturers for $4.75 per dozen. This was stated by persons in a position to speak from actual knowledge, as they had been brought into competition with such quotations, which their principals refused to accept.

This disturbance of the market came at a time when prices were sadly out of line with a basis assumed to have been established at the meeting of manufacturers in Philadelphia on April 23, the proposal of retailers to cancel parts of orders necessarily causing considerable resentment. It was pointed out by one well known establishment that a large manufacturer in up-state Pennsylvania had refused to ship against orders which had been accepted at low prices. This was viewed by buyers as justifying their action if the manufacturers in question were justified in repudiating low price orders.

Mill men commenting on the hysterics into which the market had been thrown by reports of cancellations attributed to incorrect construction placed on statements concerning discontinuance of the fixed-price policy, thought it meant the end of any undertaking to fix a minimum price, but that the result might be a control of production by individual manufacturers in the event of their contributing by overproduction to a flooded market.

As was pointed out by a well known mill executive, the hosiery code authority receives reports monthly from virtually all the manufacturers as to their production and shipments and, therefore, is in a position to know the extent to which any one manufacturer may be overproducing. Using the figures from his own report to the code authority, he showed that his production for May was approximately

20 per cent above his shipments, and said: "Unless I, of my own volition, adjust my production to the basis of shipments, the code authority would be warranted in requiring that I do so. This would be better, in my judgment, than ordering curtailment by the entire industry and would impose upon those responsible for the glut obedience to instructions to take the necessary steps for relieving the market of its surplus."

It appears that this manufacturer's view may have inspired a resolution adopted by the Full Fashioned Hosiery Association, Inc., at a meeting on June 12, to the effect that the code authority be requested to establish a better ratio of production and distribution. This is regarded as one step toward the elimination of vicious price cutting, which is one of several evils or misfortunes with which the hosiery industry has to contend.

It is asserted by one of the older department store hosiery buyers that hosiery is the most abused division of textiles, not only because of practices common to an element among manufacturers, but due to the methods by which the consumer may be reached and deceived.

It is common knowledge in urban hosiery manufacturing centers that considerable hosiery obtained by mill employees through influence of the mill management is peddled among offices and homes at prices that at first flush are suggestive of an inferior quality of the merchandise. The sales person dissipates this suspicion by stating that she is employed in the mill and buys the hosiery at first cost and is, therefore, enabled to offer it under regular retail prices. The quantity of hosiery sold by this means is insignificant, but the effect on the mind of the consumer approached is menacing to the price structure as undertaken to be maintained by retailers for hosiery offered in legitimate ways.

South Has Half-Hose Business; Some Style Trends . . .

"There is no profit for a northern manufacturer of men's half-hose of types that are made in southern mills for the popular price brackets," says the management of one of the comparatively few remaining half-hose plants in Pennsylvania. To get any worthwhile volume of business, he states, it is necessary to produce an attractive stocking of reasonably good quality to be sold to jobbers in a range of $1.35 or $1.70 per dozen. A popular combination, he goes on, "is Celanese and rayon; in fact, rayon with almost any fiber other than silk. Virtually the only business in half-hose left for the average northern manufacturer is in numbers to sell at 35 to 50 cents per pair, for seamless, in retail stores." This business, it was stated, is basically profitable, but the volume is light.

According to other authorities perhaps closer to the retail trade than the manufacturer quoted, the popular price for half-hose is 25 cents per pair and offerings of six pairs for $1.00 have been proving quite appealing, particularly to women who buy the stockings their husbands and sons wear. It is believed the bulk of the distribution is in this classification, that is, 25 cents per pair or six pairs for $1.00, and thereabout.

"I see no necessity for stripes in the tops of half-hose," says a manufacturer, noting the continued drift to fancies, in which horizontal stripes in the leg are said to be quite popular. With the advent of summer temperatures, there developed a broader interest in somewhat shorter socks for men, with the improvement of a knitted-in or laid-in elastic yarn by which the garter is dispensed with. The elastic top for doing away with the garter was a development of several years ago. One complaint heard in the trade was that the stockings were unnecessarily long, due to the manufacturer's conception of the proper location for the elastic welt, in order to obtain the better results from the substitution for garters. It is maintained that the elastic top is more comfortable than the garter provided the stocking is comfortably supported.

A widely known manufacturer of a branded line of quality half-hose is understood to have had considerable success with plain solid colors, both ribbed and flat. This type of stocking seems to escape price competition, proving a successful competitor of foreign half-hose.

Commenting on spectacularly low prices for attractive styles of certain numbers of half-hose, an observer said he did not know whether to attribute it to developments in machinery, by which cost is materially reduced, or to cut-throat competition inspired by mill managements in a particularly advantageous position for obtaining volume production at minimum cost. It is apparent there is a tend-

ency among some of the more important manufacturers to increase production by the installation of only modern equipment. It is obvious that the archaic equipment would be out of competition as to both style and cost. A well known Southern mill during the Knitting Arts Exhibition in Philadelphia, in April, placed an order for 100 labor saving machines, according to gossip in the trade. It is pointed out by competitors that this addition to the plant may have been inspired by a possibility of the NRA administration clamping the lid down on further installation of equipment unless the necessity for it can be shown. In any event, the half-hose mills with 1934 model machines should be masters of their markets in 1935. It has been evident for some time that manufacturers who do not keep in step with styling will be likely to be frozen out.

The Situation in Children's and Infants' . . . .

Hosiery for children and infants is rated by some market observers as representing the more satisfactory division of the hosiery industry. Sales this year have been in fairly good volume and most of the manufacturers of infants' lines have been able to lay aside something for tiding them over the next depression, if and when.

The short socks for juveniles fit nicely into requirements for hot weather and the price notion, and are viewed as a utility stocking from the fact that they are so very serviceable for wear as under-hose in times of chilly temperature.

While juvenile stockings have been singled out as constituting a satisfactory item in this year's marketing, there are complaints of not only under-selling but of deceptive practices. For example, in a recent transaction a lot of sixty dozens was invoiced as "seconds", but the stockings were not marked as either "seconds", "irregulars" or an "over-run". The invoice price, assuming the stockings were first quality, was said by hosiery-men having a knowledge of the transaction, to be 50 cents under the market.

Some Production Comparisons

Hosiery statistics for April 1934 and 1933 from 325 identical mills as compiled by the Department of Commerce present a showing conforming in many particulars to a complaint common in the trade in June that the business of hosiery manufacturers was in a less satisfactory state in the 1934 April than a year previous. The phase complained of was, of course, the price level, for which the April reports from the more than 300 mills supplied the explanation—increased production and a falling off of orders booked.

Production of hosiery in April 1934 was increased by 724,289 dozens over the corresponding 1933 month, while orders booked declined by 329,778 dozens. There was an increase of 309,319 dozens in net shipments, and 2,208,422 dozens in unfilled orders on the 1st of May. But stocks in mills on May 1 were 735,155 dozens more than a year before, and during April there were cancellations of orders for 117,385 dozens, an increase of 32,531 dozens over those for April 1933.

Contributing to the unsatisfactory condition in the market for men's half-hose this year was an increase of 397,105 dozens produced in April and a drop of 381,072 dozens in orders booked. There were increases of 239,530 dozens shipped and 884,543 dozens in unfilled orders at the end of April, but an increase of 237,786 dozens in stocks in mills on May 1.

Women's full-fashioned made a better showing for April this year than for the like month of 1933, with unfilled orders at the end of the month amounting to 398,633 dozens, which compensated for a decline of 184,732 dozens in shipments and 184,732 dozens in orders booked during the month. Notwithstanding the drop of 61,674 dozens in production, during April, stocks in mills on May 1 were greater by 315,172 dozens than at the beginning of May 1933.

April production of cotton hosiery, all kinds, increased in April by 383,930 dozens over that last year, and about 1,400 dozens of this increase was of women's full-fashioned. Women's silk full-fashioned gained slightly in production, while women's silk seamless went forward by approximately 100 per cent. There was a sharp decline in infants' rayon and in rayon for women's full-fashioned, the same fiber scoring a substantial gain in the classification boys', misses', and children's.

Making comparison of April with the preceding month, the changes were mainly in the direction of a better balance of production and distribution.

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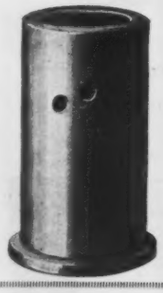

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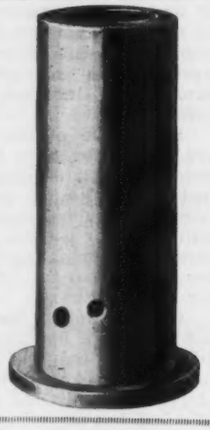

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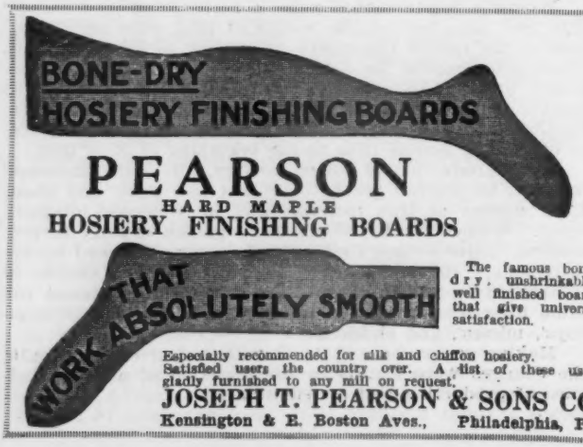

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The Underwear Situation

During the period of an unsettled market for raw cotton in June, a few fairly large retailers were asking manufacturers for rebates from prices specified in orders for medium weight underwear soon to be due for shipment. This was not indicated as general, reports of this attitude relating to specific cases. Some requests for adjustments carried threats that, unless conceded, it might be desirable to cancel the orders.

There has been some new business in lightweights, from quarters where, it was ascertained, it had become necessary for retailers to plug up holes in their stocks. Cotton is pretty much in the position of a year ago, so far as relates to price, recent closing figures in the exchange being somewhat higher, but cost of producing underwear is considerably increased by reason of changes required under the code. These costs are not likely to be diminished this year, it is pointed out in the trade, while there is a possibility, under the curtailment in production of yarn, of increases.

Although contracts for men's cotton ribs placed to date represent a goodly part of the season's probable requirements, recent quotations, submitted at the request of buyers rather than representing effort on the part of mills to push for sales, showed some little disparity. The state of the market in May and June left the inference that production of heavies in April, as accounted for in a report of the Department of Commerce, was unnecessarily heavy. Production, all classes, was slightly less than in March, while new orders and shipments were materially diminished, as were unfilled orders on May 1. In rayon underwear there were declines in new business and in shipments, compared with March, but production also was lighter. Stocks were heavier on May 1 than on April 1. In the case of underwear, the indicated adverse condition as measured by orders, shipments, unfilled orders and remaining stocks seems more likely to be due to under-demand rather than over-production, say some mill heads.

Sweaters and Bathing Suits

Having lost nearly six weeks production due to strikes for union recognition, shorter work week and increase in wages, the sweater manufacturers in Philadelphia are making no haste about building up stocks of staple numbers. This attitude seems to have been strengthened by the declination of the NRA Administration to permit the affected mills to make up the lost time by working 14 hours extra time until the deficit in machine hours has been wiped out.

The sweater trade is confronted with a very late start on fall lines, and this in turn is backing up some business in worsted yarns, while producers of cotton coats and certain types of garments in which yarn combinations may be used in place of adulterants, may be fairly well engaged. This is, however, only a small fraction of the business in sweaters for fall and winter retailing that ought to be coming through for keeping plants engaged during the ordinarily brisk summer months in this class of goods.

While comparatively few dealers stock heavily of bathing suits, for which there was increasing demand during the sweltering days of June, the volume of repeat orders has not been as large as was looked for. It is doubtful whether any great number of swim suits could be found for immediate delivery, as most manufacturers, fearful of cancellations in the event of a late or slow season, accumulated no stocks of moment. A few mills were kept active during a part of June in taking care of repeats.

It has been not uncommon to come on the market with samples of and prices for bathing suits in August for the ensuing season. This year, it is expected, the opening will be considerably delayed, as was the case in 1933. Few orders for 1934 bathing suits were confirmed before January. The procedure as to 1934 seems likely to be repeated for the 1935 season.

Tests for Eyesight

In making fine goods, the quality of the eyesight of the workers is getting increasing attention. There is a limit, too, in defective eyesight, that must be established, to avoid industrial accidents. We don't take on a worker whose sight proves by test, to be less than 20/40, until the defect has been corrected with glasses.

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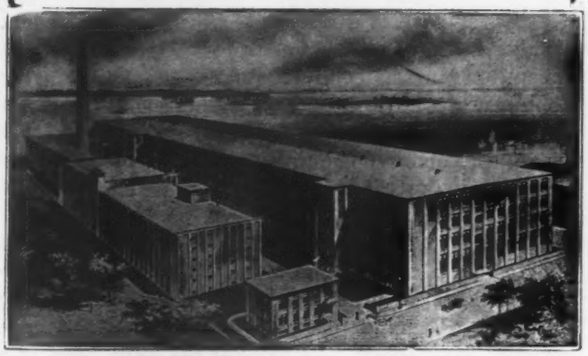

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REVIEW OF THE YARN MARKET

Philadelphia, Pa., June 16, 1934.

WEAKNESS of the markets for all types of textile trade yarns this month was believed in the several divisions to be a reflex of a semi-paralysis of the goods markets due to threatened disruption of the relations of labor and industry. Representative manufacturers and traders expressing this view stated they got their inspiration for it among the small community retail stores, the first elements in distribution to feel the effect of fear from overhanging clouds.

Yarns representing all textile fibers have been affected alike, and the middle of June seemed to present nothing of a strictly cheerful character for spinners. Demand proved not sufficient to hold yarns at May levels. Price changes have been in a narrow range, but significant from the viewpoint of those interests striving to avert any material slipping of values.

Weakness in cotton yarns, speaking generally, was indicated in a decline in shipments against old orders and by the absence of new business of moment. Yarns of course received no support from cotton, for which there had been a vacillating market having the earmarks of an eventual steadying on a somewhat higher level than the average for this month. Key numbers, such as 10s single carded on cones, for the knitting trade, were a sufficient index of the range for the entire list.

Several Philadelphia houses sold a good grade of 10s for 25 cents, the common quotation at the time being 25½. Some houses were holding for 26 and a very few sitting steady on 27 cents. It was stated by representatives of the latter than no sales of 27-cent carded yarn were being consummated, other than for super carded, rating one to 1½ cents higher than good average quality having the better movement.

The market was subjected to a severe test as to price in June and in the opinion of most traders, stood the ordeal very well, considering the relatively insignificant weight of yarn moving to manufacturers and virtually no one doing any buying on a speculative basis. 30s double carded were sold for 35½ cents, which probably was the top for very good yarn at the time.

Yarn merchants stated there was a notable falling off in deliveries of both weaving and knitting yarns in June, weakness in this respect being especially manifest in weaving numbers. While 30 cents was an asking price for 20s/2 warp, some sales were reported at 28, a cent more being readily obtainable for small lots for spot shipment.

The yarn trade now doubts that stocks of cotton goods in retail stores were as low as was reported generally. It was thought spinners in the carded group were showing enough uneasiness to bring them together for a discussion of means for putting some backbone in the market. In any event, more orders at low prices were turned down in this month than in May.

Deliveries of combed yarns have been fluctuating for some time. Mid-June brought some little improvement to some houses, manifest in inquiries and more shipments of small lots. Prices are indicated in sales of 38s/1 at 42 cents, no change in the past several weeks.

Mercerized yarns are selling in a small way, the aggregate of the business being in no momentous volume in the aggregate, however. Prices appear to be on a basis of around 68 to 70 cents for 60s/2. Sales have been effected on the basis of the soft side of the range, while some houses say they are accepting no business at the hard side.

Robert C. Boger, who a few weeks ago was quoted as saying he regarded mercerizing and dyeing, each, a service and not to be classed as manufacturing in an interpretation of the cotton textile code, is in receipt of quite a few communications from the underwear and hosiery trades expressing accord with that view. Mr. Boger divides his time between his company's mercerizing plant in Philadelphia and the spinning mill at Lincolnton, N. C.

Worsted Yarns

Worsted spinners profess to be more interested in specifications against existing orders than in new ones. Both are hard to get, it is stated, and prices tend to an easing. Some new lows were recorded in the first half of June, notably in knitting numbers, Bradford system 2/20s, quarter blood, having been let go for one dollar a pound. This is 30 cents below the peak for last fall and 25 cents under asking prices in January last. Worsted yarns for men's wear piece goods have not gone off so sharply, but prices are what buyer and seller agree upon in individual transactions.

New business in worsted yarns is, of course, retarded by a provision of the code which bans cancellations and adjustments, making acceptance of delivery as binding upon buyers as delivery by the seller. If the code really puts a stop to cancellation of orders, it will have achieved more than what spinners themselves, unaided by a deputy administrator of the NRA, have been able to bring about. The provision is very useful, at this time, when spinners doubtful as to credit and in fear of being penalized for violation of a code, may insist upon buyer's acceptance of its provisions.

A peculiarity of the code under which worsted spinners are operating is its discrimination in favor of knitters in matter of terms. A buyer of knitting yarns has the choice of a discount of three per cent 10 days or two per cent 10 days, 60 extra, while weaving yarn is invoiced two per cent 10 days. A weaver who buys less than 500 pounds of yarn in colors pays five cents a pound additional for the lot, over the quantity price, while the knitter may buy as little as 20 pounds and not be penalized for not taking 500 pounds or more.

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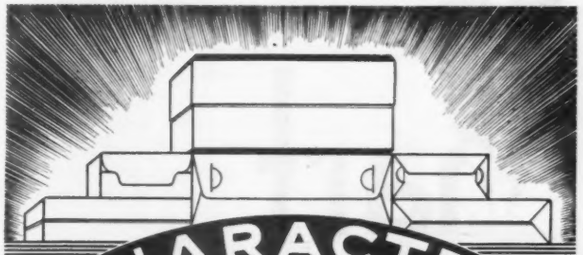

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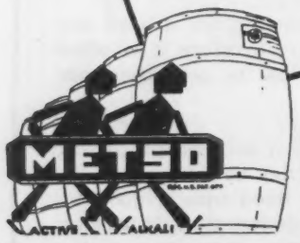

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Since 1890

"Cotton Mill Machinery Calculations"

EVERY Textile Man should have these reference books. They cover in a detailed and thorough manner all calculations necessary to be made on any cotton mill machinery manufactured in the United States and constitute one of the best references on the subject obtainable.

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Grant Bldg., Atlanta, Ga.

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SHEAR these goods or cancel our order!"

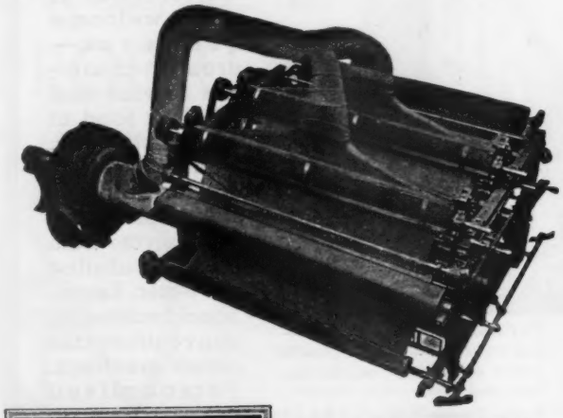
RECENTLY a large Southern mill was told by a converter that if they didn't shear the 100,000 yards of cotton goods he had ordered, they could cancel the order.

THEY had been singeing off hanging ends in the roll but were not getting ends rolled in with the goods. When the goods were dyed or printed, these ends caused trouble.

SO the converter gave his ultimatum—"If the goods aren't cleaned thoroughly and uniformly of hanging ends, loops, etc., by *machine*, you can cancel my order."

AND so we got instructions to "ship a Hermas Automatic 4-knife machine in 5 days." We were able to make immediate delivery—and the mill saved the order.

YOU, too, can improve your production with our Automatic Shear. This machine pays for itself in a few months. We will be glad to study your clothroom set up and show the exact savings you can effect.



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A Middle States worsted mill reports that their large installation of Eadie Oil-lubricated Rings has increased the production of their twisters 50%. They also state that fly is about 90% less.

The DIAMOND FINISH Eadie ring is THE auto-lubricated ring, lubricated ALL AROUND the circumference with the right quantity and quality of oil. No wonder the boss is smiling!

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SINGLE ROOMS FROM $4
DOUBLE ROOMS FROM $6

All with outside exposure, bath and shower, electric fans, circulating ice water

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We have built a reputation that is known over the entire South by our special attention to the minutest detail.

We are more than ready to answer any question that relates to your printing problems.

Write us and let us quote you on anything from a postal card to a full bound book.

The A. J. Showalter Co.

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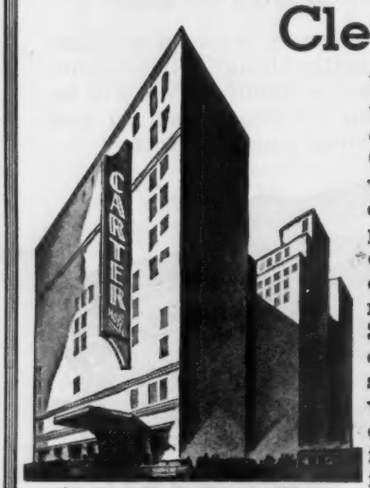
DALTON GEORGIA

When You Come to Cleveland



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When next you visit Cleveland come to the New Carter Hotel. A warm welcome awaits you—prompt, courteous service and delicious food at reasonable prices. Six hundred large, comfortable outside rooms each with private bath and circulating ice water. Exceptional facilities for conventions and sales meetings. Personalized management.

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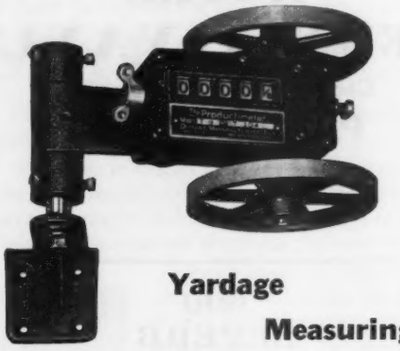

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The *New Productimeter Yardage Counter*, Model 4-T-9, is a high speed, full ball bearing counter built for hard service.

It records in eighths of yards and is equipped with two rubber rim aluminum measuring wheels for greater accuracy.

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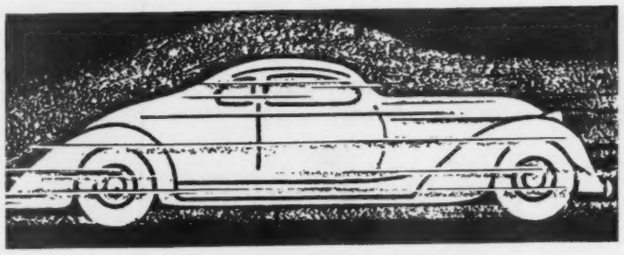

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TRADE-MARK REG.
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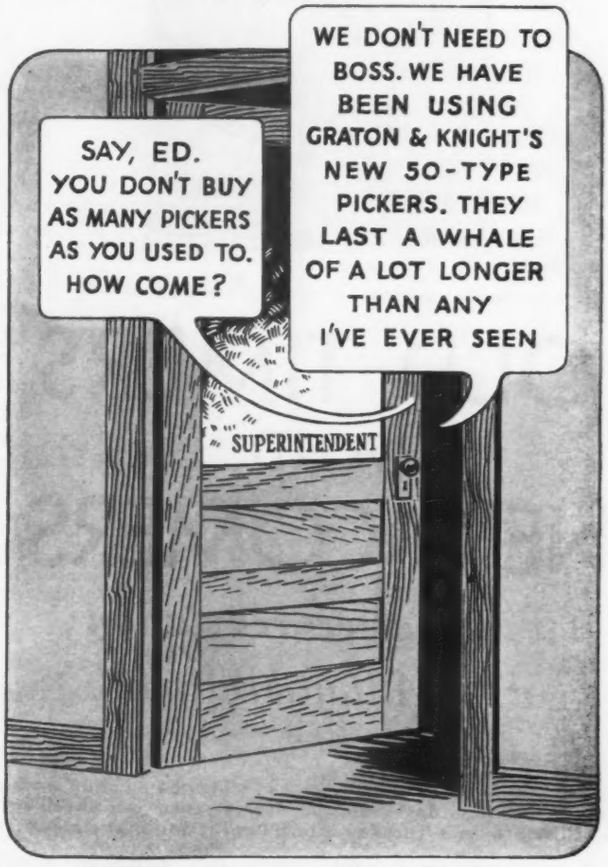
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SUPERINTENDENT

50 TYPE PICKERS LAST LONGER

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They are made in three thicknesses. All accurately maintained.

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Then you realize you are almost famished and amble into the dining room, delighted to find a very informal atmosphere where you can do and act as you jolly well please. When the waiter brings your order, you wonder how in the world such marvelous food can be served at such a reasonable price . . .

The soft music has put you in a pleasant frame of mind and you decide to enjoy a stroll about the terrace (where dinner is served during hot summer months, weather permitting) and thence, back to your room to line up tomorrow's schedule.

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No wonder so many textile men stop at the Biltmore, year after year.

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with SHOWER
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A V-belt bending around its pulley is under conflicting stresses.

The top is under tension and grows narrower. (Fig. 1). The bottom is under pressure—therefore it widens. These stresses force a straight-sided V-belt to *bulge* in the sheave groove. (Fig. 1) This means uneven wear on the belt sides—*shorter life!*

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These two definite dollar savings are the direct result of the patented concave side—found only in Gates Vulco Rope Drives.

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WRITE *the GATES RUBBER CO., Denver, Colorado for Valuable Book on Transmission: FREE*

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ROY GRINDERS for ECONOMY.

All Makes of Grinders Promptly and Thoroughly Repaired

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Worcester, Mass., U. S. A.

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Let Stewart quote on your requirements. Write for the new Stewart Catalog.

The STEWART IRON WORKS CO., Inc.

210 Stewart Block — Cincinnati, Ohio

Close up detail of Stewart Oval Back I Beam Fence post with integral [one Piece] extension arm.

LOOM REEDS

Quality – Not Quantity Is Our Aim

The Harris method of manufacturing reeds, is the result of many years of experience in making reeds to fit the high requirements of mills, who are most exacting in their choice of equipment.

It is not our purpose to produce reeds in the greatest possible quantity—*it is our purpose to maintain the highest possible quality*, through an organization thoroughly trained to at all times consider the purchaser's interests first.

Repeat orders from a constantly growing number of representative southern mills, indicate the satisfaction that comes only from manufacturing to an ideal of quality.

HARRIS MANUFACTURING CO.
207 WALKER ST. ATLANTA, GA.

Fully 25% of All Cotton Textile Spindles in the United States are Operated on the Loper System.

Ralph E. Loper Co.

INDUSTRIAL ENGINEERS

Specialists in Textile Costs Over 21 Years

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● We are in a position to offer the right men very productive territories acting as our selling agents. No investment is required.

● For 48 years we have been considered one of the leaders in the manufacture of Fence.

● The Industrial field has proven a fertile field for our products. If you contact the textile mills, look around or think back and you'll recollect or see the popularity of Fence as a protective measure. However, there are still an almost unlimited number of prospects, ready to be sold —and we believe with the correct presentation, Stewart Fence can and will be sold in large quantities for Industrial use. We have a number of fine calibre representatives who have increased their earning power considerably since they took over our line. If you feel qualified and are interested in an exclusive territory—and additional business, write stating your present set-up and lines handled.

Send your reply to

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Surplus machinery, some as good as new, including RODNEY HUNT DYEING MACHINES, dryers, tigers, shears, brushes, presses, embossing machines, shafting, pulleys, belts, power plant equipment, splitters; in fact, almost anything required in a pile fabric mill.

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MANAYUNK, PHILADELPHIA, PA.

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Your Advertisement In This Section—

HAVE you some equipment, new or second-hand, which you wish to dispose of; or do you desire a good man to fill a vacancy in your mill; do you desire a position; do you desire your business or professional card placed before the textile industry?—

Then why not try an advertisement in this section of COTTON with its 10,000 copies per month?

Advertising in this section produces results at small cost. Note the rates above and tell us what you wish to advertise.

COTTON
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The Brooks Oil Company desire experienced boiler room specialty salesmen to cover two established territories selling Brooks Improved Boiler Metal Treatment and other products. Only well qualified and recommended need apply. Must have automobile. Drawing account and high commission. Excellent opportunity for the right men. State full experience and references. Address Brooks Oil Company, Cleveland, Ohio

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Former Member Examining Corps
U. S. Patent Office

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ELIMINATE CORROSION PITTING and SCALE in Boilers

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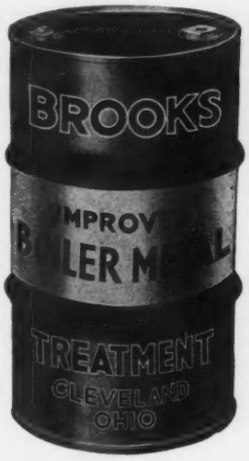
For over thirty years, thousands of plants throughout the country have found BROOKS Improved Boiler Metal Treatment a certain road to lower boiler maintenance costs.

Make this simple test today! If you are not using BROOKS Improved Boiler Metal Treatment, a post card will bring you a small sample with which to make this test.



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Cleveland, Ohio

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WHEN you are in the market for tanks, towers and kindred products, remember that 80 years of specialization in this field is at your command in COLE products. They are known all over the country for their quality and long life. We will gladly quote prices or submit designs to meet any special requirements for

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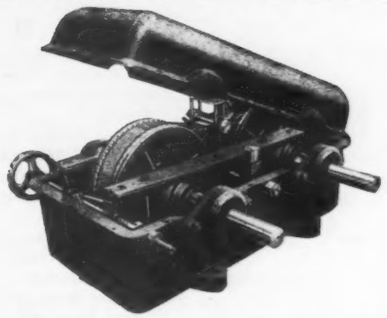
POSITIVE INFINITELY VARIABLE

Speed Transmission



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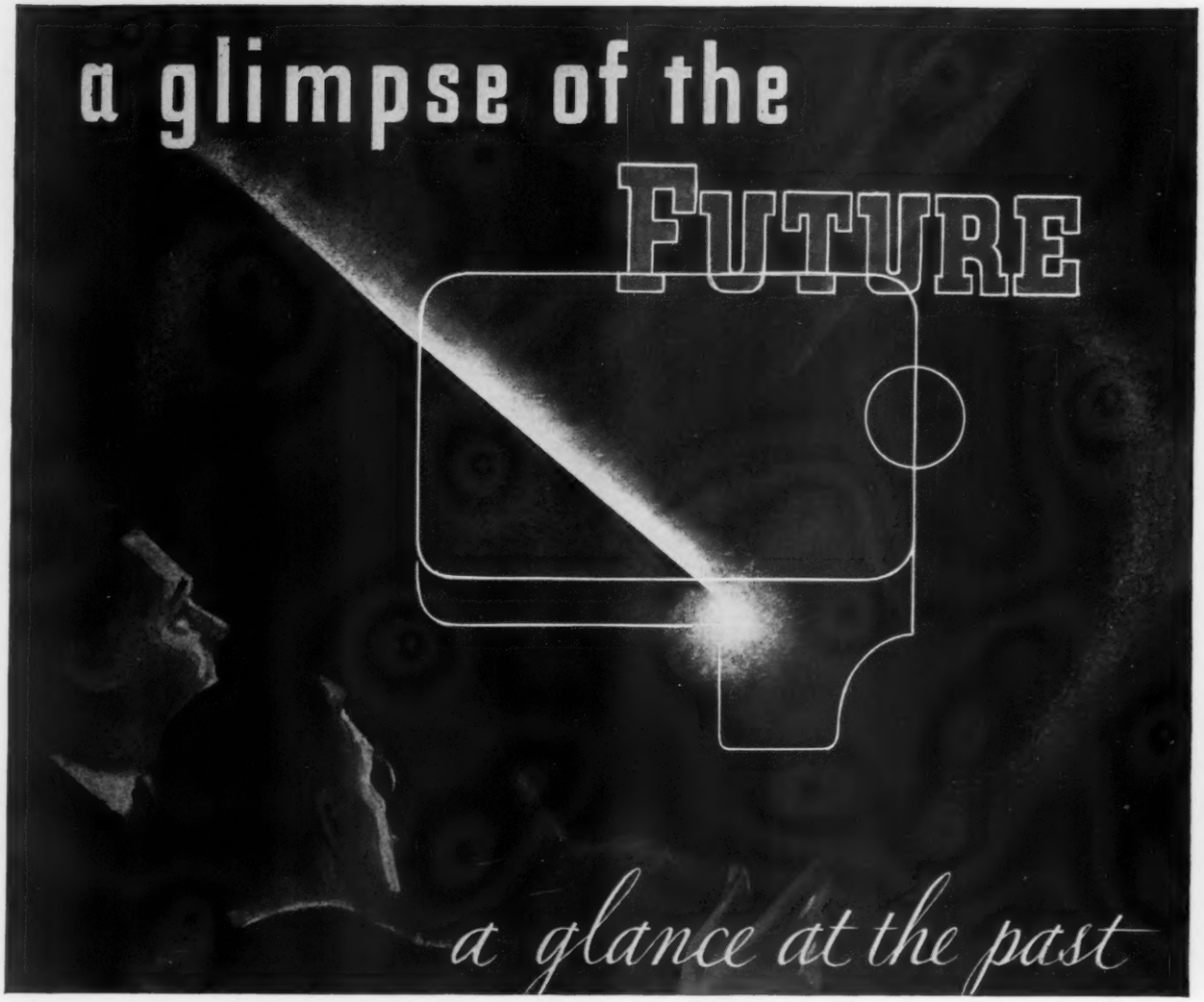

The history of pick counters dates back 26 years to the first Veeder-Root Pick Counter. Or to be exact, it dates back *50 years* to the first counting devices made by Veeder-Root.

Because Veeder-Root engineers have always been so closely connected with pick counter development it was natural that they should originate every important improvement in pick counters. Often these Veeder-Root improvements have been startlingly new. Sometimes they involved changes slight enough to go unnoticed by the casual eye, although the operation of pick counters themselves were much improved.

History always repeats itself with Veeder-Root Pick Counters. Each succeeding model is better than the last. Watch for future Veeder-Root developments.

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VELV-O-RAY CL for Rayons, Acetates and mixtures . . . removes that artificial feel and produces goods that are silky, that hang well and drape to perfection, with no stickiness or evidence of rancidity.

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